# RSNA 2024 Press Kit

Visit the RSNA Newsroom at
*RSNA.org/Press24*

110th Scientific Assembly and Annual Meeting
McCormick Place • Chicago

Annual Meeting: Dec. 1–5 • Technical Exhibits: Dec 1–4

RSNA® 2024
*Building Intelligent Connections*

# RSNA 2024 Press Kit
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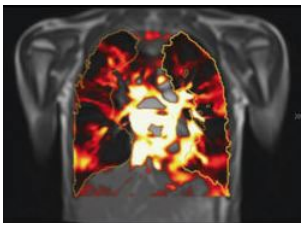
## Early Releases



## Meeting Week

# Contact the RSNA media team for help with your medical stories.

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WHY:
Our team can provide you with the experts, the context and the background you need for medical stories related to radiology.

WHO:
Our renowned medical experts and thought leaders are ready to provide journalists with authoritative background, commentary and quotes.

WHAT:
Standards, such as mammography, CT, MRI, PET, ultrasound and imaging-guided therapies. The latest technologies and treatments, including AI, photon-counting CT, theranostics, 3D printing and advanced visualization in medicine.

HOW:
**Annual Meeting** — The RSNA Scientific Assembly and Annual Meeting is the world's leading annual radiology forum and offers the latest in medical imaging research and technological advances. Our onsite newsroom provides press kits, images, access to radiology experts and media workspace. Visit the RSNA online newsroom: *RSNA.org/press24*.

**Journal Research** — News releases and highlights from RSNA's peer-reviewed scientific journals *Radiology*, *Radiology: Artificial Intelligence*, *Radiology: Cardiothoracic Imaging* and *Radiology: Imaging Cancer* are distributed regularly to RSNA media subscribers. Visit *RSNA.org/media* for access to news releases.

***RadiologyInfo.org*** — Our website for patients offers detailed information in English and Spanish about imaging procedures and treatments, screening and more, written for the general public.

**Images & B-Roll** — RSNA has radiologic images for a variety of conditions. RSNA's video library features imaging procedures and treatments to help television and web producers create timely, realistic medical segments.

**Public Service Announcements (PSAs)** — RSNA offers scripted and pre-recorded radio PSAs on important issues, such as breast cancer and lung cancer awareness.

*RSNA is an association of radiologists, radiation oncologists, medical physicists and related scientists, promoting excellence in patient care and health care delivery through education, research and technologic innovation.*

# Looking for Additional Information?

## The RSNA 2024 Online Newsroom Provides:

- High-resolution images
- Videos
- Presenter interviews
- Scientific abstracts
- Additional meeting announcements
- Exhibitor news center

All in one convenient location:

***RSNA.org/Press24***

Email: Media@RSNA.org

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Radiological Society
of North America

December 1, 2024

To: RSNA 2024 Media Attendees

From: Jennifer Kemp, M.D.
Chair, RSNA Public Information Committee

Welcome to the 110th Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), the world's premier annual radiologic meeting. More than 4,000 scientific research presentations and education exhibits will cover the latest developments in radiology and related imaging technologies dealing with diagnosis, intervention and therapy.

RSNA 2024 offers you access to an abundance of compelling medical stories and the latest in artificial intelligence (AI) research and technology.

**THE KIT:**

The RSNA Board and Public Information Committee are pleased to present the media with 12 news releases on some of the hottest topics from the scientific program. The meeting also provides facilitated access to many of the world's leading radiologic researchers and hundreds of story ideas for now and later.

Here are the topics you'll find in this kit.

Common Thyroid Medicine Linked to Bone Loss
Vaping Causes Immediate Effects on Vascular Function
Concussions Slow Brain Activity of High School Football Players
Long COVID Brain Fog Linked to Lung Function
Soccer Heading Damages Brain Regions Affected in CTE
Hidden Fat Predicts Alzheimer's 20 Years Ahead of Symptoms
Countertop Workers Exposed to Serious Lung Disease
Muscle Loss Could Increase Dementia Risk
Minimally Invasive Procedure Relieves Knee Arthritis
Eating High-Processed Foods Impacts Muscle Quality
Study Exposes High Injury Rates in Transgender Women
Women Pay for AI to Boost Mammogram Findings

You will also find Learning Center Theater highlights and a list of additional story ideas from other scientific papers and posters being presented at RSNA 2024 that are of interest to both general and specialized audiences.

I encourage you to attend plenary and special sessions to hear some of the most influential leaders, physicians and researchers speak on topics important to patient care. At the Opening Session on Sunday, RSNA President Curtis P. Langlotz, M.D., Ph.D., will deliver the President's Address: "Building Intelligent Connections."

Also during the Opening Session, Nina Ellen Kottler, M.D., M.S., will present "The Only Way to Predict the Future Is to Create It." After the Opening Session, stop by the Welcome Reception in the Connections Center and Learning Center.

During the Monday morning keynote address on Dec. 2, scientist, cardiologist and author Eric Topol, M.D., will discuss “AI’s Transformation of Medicine.” RSNA’s popular Image Interpretation Session on Monday afternoon will be moderated by Bruce Burton Forster, M.D., FRCPC.

On Tuesday morning, Carrie Cunningham, M.D., M.P.H., will present “Removing the Mask, v. 2.0.” On Tuesday afternoon, Nicholas A. Christakis, M.D., Ph.D., presents “Social Artificial Intelligence.”

The Wednesday morning session will mark the return of radiology’s favorite game show, “Microbial Mayhem: The Pathogenic Party You Won’t Forget!”

The RSNA/AAPM (American Association of Physicists in Medicine) Symposium, moderated by Lifeng Yu, Ph.D., will be held on Thursday.

Popular sessions like Case of the Day and “Fast 5” will offer engaging experiences for attendees. The Discovery Theater will feature informative presentations and entertainment.

The Technical Exhibit halls, featuring the expansive AI Showcase and Theater, provide attendees the opportunity to see all the innovative products and services being offered by exhibitors.

“Radiology Reimagined: AI, innovation and interoperability” is an interactive exhibit spotlighting new AI technologies and integration standards needed to embed AI into the radiology workflow. At the Innovation Theater, attendees can be the first to hear about leading-edge technology and product launches.

Unwind at Exhibit Hall Happy Hour in the North and South Halls on Tuesday from 3 to 5 p.m.

For more information about any of these events and sessions, including locations and times, please consult the meeting program, call 1-312-791-6610 or visit the Newsroom staff.

I appreciate your interest in the field of radiology and hope you have a wonderful experience at RSNA 2024!

# Policies and Guidelines for News Media Covering the RSNA 2024 Meeting

The Radiological Society of North America is pleased to welcome the world press to its 110th Scientific Assembly and Annual Meeting.

**GENERAL INFORMATION** The 110th Scientific Assembly and Annual Meeting, Sunday, Dec. 1, to Thursday, Dec. 5, 2024, at McCormick Place in Chicago, is an international forum of peer-reviewed research, state-of-the-art technology and education for radiologists, radiation oncologists, medical physicists and allied scientists. It is a meeting place for medical imaging leaders worldwide. As such, it provides a host of news opportunities.

**NEWSROOM LOCATION** The RSNA Newsroom is located in the South Building, Level 1 S103. Newsroom facilities include a work area, interview cubicles and food service.

**NEWSROOM HOURS** Sunday – Wednesday, Dec. 1 – Dec. 4, 8 a.m. – 5:30 p.m.

**MEDIA ELIGIBILITY** Press badges are available only to *working press* who can show evidence that their attendance results in original coverage of the RSNA Scientific Assembly and Annual Meeting in print, broadcast or recognized Internet news media. RSNA does not issue press badges to: publishers or a publication's advertising, marketing, public relations or sales representatives; publishers, editors or reporters from manufacturers' house organs or promotional publications; public relations staff of exhibitors or educational institutions; or other individuals who are not actively reporting on the meeting.

To obtain a press badge, identification certifying that you are a working member of the print, online or broadcast news media and/or a letter from an editor stating that you are on assignment to cover the RSNA Scientific Assembly and Annual Meeting is required. Business cards or membership cards from communications or writers' organizations are not sufficient to establish eligibility. If RSNA issues you a press badge, you must not participate in sales or development of ads, products for sale or CME products. Working press may NOT also register as exhibitors. RSNA reserves the right to make final determination of media eligibility.

**PROOF OF COVERAGE** If you attended a past RSNA meeting as media, you will be asked to furnish a copy of an article or report resulting from that assignment to be credentialed as press at a subsequent RSNA meeting. If a news outlet sends a staff member or freelancer, the outlet must furnish proof of resulting original coverage in order to send a representative in subsequent years. RSNA does not bear the responsibility for locating coverage.

**ADVANCE REGISTRATION** Advance registration is *strongly encouraged*. Members of the media interested in attending should visit our online registration page to access registration materials.

**ONSITE MEDIA REGISTRATION** Media must check in at the Newsroom to pick up their credentials or to register onsite. A business card or other proof of identity may be required to obtain credentials. For media registering onsite, proof of eligibility will be required. Television, video crews and photographers covering the meeting are required to check in immediately at the Newsroom each day and must be accompanied by a Newsroom representative when shooting inside McCormick Place. Shooting schedules should be provided by Nov. 15 to ensure Newsroom staff availability.

**EXHIBITOR MEDIA INFORMATION** RSNA rules prohibit news conferences at hotels or other locations away from the meeting site during meeting hours. Journalists invited to such events are asked to notify RSNA Newsroom staff. As a convenience for journalists, news releases and other information from exhibitors will be displayed in a special area of the Newsroom. Exhibitor representatives are not allowed to distribute press materials outside the Newsroom. It is inappropriate to provide any exhibitor with the news material of other exhibitors. Exhibitor representatives are not allowed in the Newsroom unless accompanied by a journalist who intends to conduct an interview. RSNA advises journalists that it neither reviews for accuracy nor endorses exhibitor news materials. A list of exhibitor press conferences will be posted in the Newsroom.

**New for 2024:** Credentialed media can now access the show floor before it opens to attendees at 10 a.m. Only invited media personnel wearing RSNA 2024 press badges are permitted entry to an exhibitor's booth during this time.

**SCIENTIFIC PAPERS & VISUALS** In order to help maintain their eligibility for peer-reviewed journal publication, scientific papers and posters may not be available to media. Reprinting of scientific abstracts or posters is strictly prohibited. Journalists who want to use slides, graphs and other visuals to illustrate coverage must have the presenter's permission. Each presenter has been notified that publication or broadcast of illustrations, tables or other portions of his or her work may adversely affect eligibility for publication in peer-reviewed journals.

**CME CREDIT** The Radiological Society of North America is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The Society sponsors this annual scientific assembly, and as an accredited sponsor, designates this educational activity for CME credit. Because RSNA is the sole sponsor of its assembly, and because the ability to offer CME credit for an educational activity rests on integral participation in the planning, implementation and evaluation of that activity, only the Society can designate this meeting or any portion of it for CME credit. To retain its status as an accredited provider, RSNA cannot and does not designate news or promotional stories issued from its meeting for CME credit, nor does it allow press to do so.

**MEDIA ACCESS** Media may access scientific presentations, plenary sessions, scientific and educational exhibits and technical exhibits during posted hours. Private areas and events, including but not limited to Board and staff offices, physician lounges, Board and committee meetings, and other scheduled private events, are reserved for RSNA representatives and designated professional attendees. RSNA retains final authority in all issues of access. Questions regarding media access should be directed to Newsroom staff.

**INTERVIEWS** Cubicles will be available in the Newsroom for media to conduct private interviews. Interviews may also be conducted in public areas, provided that traffic flow is not impeded. Interview opportunities with RSNA Board members and other Society leaders are extremely limited and must be arranged through RSNA media relations staff at 1-630-590-7762 or media@rsna.org prior to October 1. No interviews with RSNA Board members will be available during the annual meeting.

**VIDEO/PHOTO REGULATIONS** Special audio/video requests, including arrangements for taped interviews, must be submitted in writing to RSNA prior to October 1. Please email audio/video requests to Linda Brooks at *media@rsna.org*.

**Scientific Presentations/Plenary Sessions.** Television and video crews and photographers must be accompanied by a Newsroom representative when shooting in scientific sessions. Availability of photo escorts is limited. Requests for photo escorts should be emailed along with a planned shooting schedule to Linda Brooks at *media@rsna.org* by November 15, to ensure Newsroom staff availability. As a courtesy to presenters, television and video crews and photographers must obtain the permission of the speaker and moderator before shooting presentations. Television and video crews may not use artificial lights during presentations. Lights may be used only before the session begins or after it concludes. Flash photography is not allowed during scientific presentations and plenary sessions.

**Lakeside Learning Center.** Crews and photographers are asked not to interrupt physicians and others who are studying education exhibits and scientific posters. Physicians can be interviewed in public areas, provided that traffic flow is not impeded, or as they leave the Lakeside Learning Center. Flash photography is not allowed during author presentations.

**Scientific Slides or Posters.** Photographic or video reproduction of scientific presentation slides or scientific posters for publication without permission of the presenter is strictly prohibited. Media are permitted to capture images of slides and posters without the presenter's permission as background for reporting accuracy only.

**Technical Exhibits.** Technical exhibits cannot be videotaped or photographed without the expressed advance consent of the exhibitor. Crews must not enter or walk through the exhibit area with cameras rolling. Arrangements for taping establishing shots of wider areas of the show floor should be made through the Newsroom. Videotaping and photographing of technical exhibits by media must occur during posted exhibit hours. Interviews conducted with exhibitors must be used strictly for news reporting purposes without promotional consideration. Photo escorts are not required on the exhibit floor. However, media wishing to capture images or video on the exhibit floor must provide RSNA Newsroom staff with a planned shooting schedule in advance and a list of interviews conducted before the Newsroom closes each day. Advance shooting schedules should be sent to Linda Brooks via email at *media@rsna.org*.

**USE OF AUDIO RECORDING EQUIPMENT** Media may not affix taping devices to the speaker, lectern, speaker's table, microphone or McCormick Place power source during scientific or plenary presentations. Audio recordings are to be used for reportorial notes only.

**ELECTRONIC EQUIPMENT/POWER SOURCE** Media using video cameras, lights, audio recording equipment, computers or any other electronic equipment must provide their own battery-operated power source. Outside of the Newsroom, media may not plug into the McCormick Place power system.

**EMAIL DISTRIBUTION LIST** Press wishing to receive email notifications about upcoming news from future RSNA meetings can opt-in to the distribution list at the Newsroom front desk.

**HEALTH & SAFETY** As a health care organization, RSNA is strongly committed to protecting the health and safety of all meeting attendees and personnel. We will continue to monitor recommendations issued by the CDC and state/local health authorities and will adjust health and safety protocols as needed.

RSNA 2024 will be a mask-friendly environment. Attendees may choose whether to wear a face mask based on their personal health assessment and comfort level onsite. RSNA strives to deliver a welcoming environment for all. We ask attendees to be respectful of other people's choices.

**Failure to follow any of the policies outlined above will result in forfeiture of media credentials for RSNA 2024 and denial of credentials for subsequent RSNA meetings.**

**Questions can be directed to RSNA Media Relations: 1-630-590-7762 or *media@rsna.org*.**

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**Before 11/30/24 or after 12/4/24:** **RSNA Media Relations 1-630-590-7762**

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*Embargoed for release on Monday, Nov. 25, 2024, at 5:00 a.m. ET*

# Common Thyroid Medicine Linked to Bone Loss

## AT A GLANCE

- **Levothyroxine, prescribed for hypothyroidism, may be associated with bone loss in older adults, even when following current guidelines.**
- **Levothyroxine is the second most commonly used prescription medication among older adults in the U.S.**
- **Approximately 23 million Americans take levothyroxine daily.**

CHICAGO – Levothyroxine, the second most commonly prescribed medication among older adults in the U.S., may be associated with bone loss, according to a study being presented next week at the annual meeting of the Radiological Society of North America (RSNA).

Levothyroxine, marketed under multiple brand names including Synthroid, is a synthetic version of a hormone called thyroxine and is commonly prescribed to treat the condition hypothyroidism, or underactive thyroid. In people with hypothyroidism, the thyroid gland does not produce enough thyroxine on its own, often resulting in fatigue, weight gain, hair loss and other symptoms. If left untreated, hypothyroidism can lead to serious and potentially fatal complications.

Approximately 23 million Americans—about 7% of the U.S. population—take levothyroxine daily. Sometimes, patients have been taking levothyroxine for many years, but it is not clear why it was initially prescribed or if it is still required.

"Data indicates that a significant proportion of thyroid hormone prescriptions may be given to older adults without hypothyroidism, raising concerns about subsequent relative excess of thyroid hormone even when treatment is targeted to reference range goals," said the study's lead author Elena Ghotbi, M.D., postdoctoral research fellow at Johns Hopkins University School of Medicine in Baltimore, Maryland.

Though there are some variables, a normal reference range for thyroid-stimulating hormone (TSH) is typically around 0.4 – 5.0 microunits per milliliter. Excess thyroid hormone has been associated with increased bone fracture risk.

For this study—a multidisciplinary collaboration between the Russell H. Morgan Department of Radiology and Radiological Science and Endocrinology Department at Johns Hopkins Medical Institutions, Dr. Ghotbi and colleagues aimed to determine whether levothyroxine use and higher thyroid hormone levels within the reference range are associated with higher bone loss over time in older "euthyroid" adults, meaning adults with normal thyroid function.

The researchers used the Baltimore Longitudinal Study of Aging (BLSA), a prospective observational cohort study of community-dwelling older adults. Participants aged 65 and older who had at least two visits and thyroid function tests consistently within the reference ranges were included in Dr. Ghotbi's study.

"This research is a collaboration between Johns Hopkins and the BLSA, the longest-running study on aging conducted by the Intramural Research Program of the National Institute on Aging," said co-author Eleanor Simonsick, Ph.D., epidemiologist and BLSA co-director. "The BLSA's extensive data include repeated DEXA measurements at each study visit, which provides valuable insight into the progression of bone density and bone mass changes over time, offering a more comprehensive understanding of aging-related osteoporosis."

The study group included 81 euthyroid levothyroxine users (32 men, 49 women) and 364 non-users (148 men, 216 women), with a median age of 73 and TSH levels of 2.35 at the initial visit. Other risk factors like age, gender, height, weight, race, medications, smoking history and alcohol use were considered in propensity score matching of levothyroxine users versus non-users.

The results showed that levothyroxine use was associated with greater loss of total body bone mass and bone density—even in participants whose TSH levels were within the normal range—over a median follow-up of 6.3 years. This remained true when taking into account baseline TSH and other risk factors.

"Our study suggests that even when following current guidelines, levothyroxine use appears to be associated with greater bone loss in older adults," said Shadpour Demehri, M.D., co-senior author and professor of radiology at Johns Hopkins.

Jennifer Mammen, M.D., Ph.D., co-senior author and associate professor of endocrinology at Johns Hopkins, advises that adults taking levothyroxine should discuss their treatment with their health care provider and regularly monitor their thyroid function tests. "A risk-benefit assessment should be conducted, weighing the strength of the indications for treatment against the potential adverse effects of levothyroxine in this population," she said.

Other co-authors are Hamsa Ibad, M.B.B.S., and Qian-Li Xue, Ph.D.

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Note: Copies of RSNA 2024 news releases and electronic images will be available online at *RSNA.org/press24*.

RSNA is an association of radiologists, radiation oncologists, medical physicists and related scientists promoting excellence in patient care and health care delivery through education, research and technologic innovation. The Society is based in Oak Brook, Illinois. (*RSNA.org*)

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For patient-friendly information on DEXA, visit *RadiologyInfo.org*.

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*Embargoed for release on Monday, Nov. 25, 2024, at 5:00 a.m. ET*

# Vaping Causes Immediate Effects on Vascular Function

## AT A GLANCE

- **Using MRI, researchers have identified acute effects of cigarette and e-cigarette smoking on vascular function.**
- **After cigarette or e-cigarette inhalation, there was a significant decrease in resting blood flow velocity in the superficial femoral artery, especially in e-cigarette users.**
- **Decreased venous oxygen saturation was also present in vapers, whether or not the e-cigarettes contained nicotine.**

CHICAGO – Researchers have identified acute effects of cigarette and e-cigarette smoking on vascular function, even without nicotine. The results of the ongoing research are being presented next week at the annual meeting of the Radiological Society of North America (RSNA).

E-cigarettes, also known as vapes, are battery-operated devices that heat a liquid to produce an aerosol, which is then inhaled into the lungs. Vapes contain significantly fewer chemicals and toxins than are found in tobacco smoke. As a result, e-cigarettes are believed by many to be less harmful than cigarette smoking. Vapes also come in various flavors, making them popular among young people.

"E-cigarettes have long been marketed as a safer alternative to regular tobacco smoking," said study lead author Marianne Nabbout, M.D., a radiology resident at the University of Arkansas for Medical Sciences in Little Rock. "Some believe that e-cigarettes don't contain any of the harmful products, such as free radicals, found in regular tobacco cigarettes, because no combustion is involved."

While vaping exposes users to fewer toxic chemicals than cigarettes, it can still be detrimental to vascular function and overall health.

In the study conducted at the University of Pennsylvania, Dr. Nabbout and colleagues sought to identify the acute effects on vascular function of cigarette smoking and the immediate effects of e-cigarette vaping, with and without nicotine.

A total of 31 healthy smokers and vapers ranging in age from 21 to 49 years have been included to date. In three separate sessions, study participants underwent two MRI exams, one before and one after each of the following smoking/vaping episodes: tobacco cigarette, e-cigarette aerosol with nicotine and e-cigarette aerosol without nicotine.

A cuff was placed on the upper thigh to restrict blood flow. Once deflated, femoral artery flow velocity (a measure of the speed of blood flow in the femoral artery) and venous oxygen saturation (a measure of the

amount of oxygen in the blood that returns to the heart after supplying oxygen to the body's tissues) were evaluated.

Cerebrovascular (blood flow in the brain) reactivity was measured with a special type of MRI called phase-contrast MRI.

The data of the smokers and vapers was then compared to the baseline scans of 10 non-smokers and non-vapers ranging from 21 to 33 years old.

Following inhalation of each type of vaping or smoking, there was a significant decrease in the resting blood flow velocity in the superficial femoral artery. This artery runs along the thigh and supplies oxygenated blood to the entire lower body.

The decrease in vascular function was most pronounced after inhalation of e-cigarettes containing nicotine, followed by e-cigarettes without nicotine.

Decreased venous oxygen saturation was also present in vapers, whether or not the e-cigarettes contained nicotine. This suggests an immediate decrease in the uptake of oxygen by the lungs after vaping.

"This study serves to highlight the acute effects smoking and vaping can have on a multitude of vascular beds in the human body," Dr. Nabbout said. "If the acute consumption of an e-cigarette can have an effect that is immediately manifested at the level of the vessels, it is conceivable that the chronic use can cause vascular disease."

According to Dr. Nabbout, the take-home message for the public is that vaping may not be free of harm. "Ultimately, we are relying on science to help guide the regulation of such products in favor of public health," she said. "Refraining from smoking and vaping is always recommended."

This research project is supported by the National Institutes of Health.

Co-authors are Michael C. Langham, Ph.D., Alessandra Caporale, Ph.D., Shampa Chatterjee, Ph.D., Frank T. Leone, M.D., M.S., Andrew Strasser, Ph.D., Christiana Cottrell, B.A., Rasleen Grewal, B.S., and Felix W. Wehrli, Ph.D.

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For patient-friendly information on vascular imaging, visit *RadiologyInfo.org*.

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*Embargoed for release on Tuesday, Nov. 26, 2024, at 5:00 a.m. ET*

# Concussions Slow Brain Activity of High School Football Players

## AT A GLANCE

- **High school football players who sustain concussions exhibit slowed aperiodic brain signals.**
- **Aperiodic slowing was strongly associated with worse post-concussion cognitive symptoms and test scores.**
- **The results highlight the importance of protective measures in contact sports.**

CHICAGO – A new study of high school football players found that concussions affect an often-overlooked but important brain signal. The findings are being presented next week at the annual meeting of the Radiological Society of North America (RSNA).

Reports have emerged in recent years warning about the potential harms of youth contact sports on developing brains. Contact sports, including high school football, carry a risk of concussion. Symptoms of concussion commonly include cognitive disturbances, such as difficulty with balancing, memory or concentration.

Many concussion studies focus on periodic brain signals. These signals appear in rhythmic patterns and contribute to brain functions such as attention, movement or sensory processing. Not much is known about how concussions affect other aspects of brain function, specifically, brain signals that are not rhythmic.

“Most previous neuroscience research has focused on rhythmic brain signaling, which is also called periodic neurophysiology,” said study lead author Kevin C. Yu, B.S., a neuroscience student at Wake Forest University School of Medicine in Winston-Salem, North Carolina. “On the other hand, aperiodic neurophysiology refers to brain signals that are not rhythmic.”

Aperiodic activity is typically treated as ‘background noise’ on brain scans, but recent studies have shown that this background noise may play a key role in how the brain functions.

“While it’s often overlooked, aperiodic activity is important because it reflects brain cortical excitability,” said study senior author Christopher T. Whitlow, M.D., Ph.D., M.H.A., Meschan Distinguished Professor and Enterprise Chair of Radiology at Wake Forest University School of Medicine.

Cortical excitability is a vital part of brain function. It reflects how nerve cells, or neurons, in the brain’s cortex respond to stimulation and plays a key role in cognitive functions like learning and memory, information processing, decision making, motor control, wakefulness and sleep.

To gain a better understanding of brain rhythms and trauma, the researchers sought to identify the impacts of concussions on aperiodic activity.

Pre- and post-season resting-state magnetoencephalography (MEG) data was collected from 91 high school football players, of whom 10 were diagnosed with a concussion. MEG is a neuroimaging technique that measures the magnetic fields that the brain's electrical currents produce.

A clinical evaluation tool for concussions called the Post-Concussive Symptom Inventory was correlated with pre- and post-season physical, cognitive and behavioral symptoms.

High school football players who sustained concussions displayed slowed aperiodic activity. Aperiodic slowing was strongly associated with worse post-concussion cognitive symptoms and test scores.

Slowed aperiodic activity was present in areas of the brain that contain chemicals linked with concussion symptoms like impaired concentration and memory.

"This study is important because it provides insight into both the mechanisms and the clinical implications of concussion in the maturing adolescent brain," said co-lead author Alex I. Wiseman, Ph.D., assistant professor at Simon Fraser University in Burnaby, British Columbia, Canada. "Reduced excitability is conceptually a very different brain activity change than altered rhythms and means that a clear next step for this work is to see whether these changes are related to effects of concussion on the brain's chemistry."

The results highlight the importance of protective measures in contact sports. The researchers cautioned that young players should always take the necessary time to fully recover from a concussion before returning to any sport.

The findings from the study may also influence tracking of post-concussion symptoms and aid in finding new treatments to improve recovery.

"Our study opens the door to new ways of understanding and diagnosing concussions, using this novel type of brain activity that is associated with concussion symptoms," Dr. Whitlow said. "It highlights the importance of monitoring kids carefully after any head injury and taking concussions seriously."

Other co-authors are Elizabeth M. Davenport, Ph.D., Laura A. Flashman, Ph.D., Jillian Urban, Ph.D., Srikantam S. Nagarajan, Ph.D., Kiran Solingapuram Sai, Ph.D., Joel Stitzel, Ph.D., and Joseph A. Maldjian, M.D.

This work was supported by the National Institutes of Health (NIH) grants R01NS082453 and R01NS091602, NIH grant F32-NS119375, a Canadian Institutes of Health Research (CIHR) Banting Postdoctoral Fellowship (BPF-186555), and a CIHR Canada Research Chair (CRC-2023-00300).

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# Long COVID Brain Fog Linked to Lung Function

## AT A GLANCE

- **In long COVID, lower pulmonary gas exchange may be associated with impaired cognitive function.**
- **Lower gas exchange was also associated with lower gray matter and white matter volumes and increased cerebral blood flow.**
- **Approximately 17.6% of adults in the U.S. have experienced long COVID.**

CHICAGO – In patients with long COVID, lower pulmonary gas exchange may be associated with impaired cognitive function, according to a study being presented next week at the annual meeting of the Radiological Society of North America (RSNA).

According to the National Center for Health Statistics, approximately 17.6% of adults in the U.S. have experienced a post-COVID condition commonly referred to as long COVID. People with long COVID may exhibit a wide variety of symptoms, including difficulty concentrating ("brain fog"), change in sense of smell or taste, fatigue, joint or muscle pain, dyspnea (shortness of breath), digestive symptoms, and more. These symptoms may persist for weeks, months, or even years after COVID-19 infection.

Researchers from the University of Iowa in Iowa City set out to assess associations between pulmonary MRI gas exchange, structural and functional brain MRI, and cognition in long COVID patients. In pulmonary gas exchange, oxygen moves from the lungs to the bloodstream, while carbon dioxide moves from the bloodstream to the lungs.

"This is the first time that MRI has been used to jointly assess lung and brain function to investigate their relationship in long COVID," said the study's lead author Keegan Staab, B.S., graduate research assistant in the Department of Radiology at the University of Iowa in Iowa City. "This research is new in that it combines multiple unique imaging types to study a multiorgan relationship in a disease population."

Senior study author Sean B. Fain, Ph.D., professor and vice chair for research in the Department of Radiology at the University of Iowa, added, "If these findings can be generalized to the long COVID population, the study suggests that there may be a causative relationship between cognitive dysfunction and lung dysfunction, suggesting a potential treatment strategy using methods that target improved gas exchange."

For the study, 10 female and 2 male patients (median age: 59 years) who had persistent dyspnea and/or fatigue following the resolution of acute COVID-19 infection were recruited from a post-COVID-19 clinic. Hyperpolarized Xe pulmonary MRI, structural and functional brain MRI, pulmonary function tests and cognitive tests were acquired.

"129Xe MRI allows for advanced measurements of ventilation and gas exchange," Staab said. "The literature also indicates that 129Xe may be more sensitive to pulmonary injury compared to standard breathing tests, making it better suited to study long COVID in which patients typically have normal breathing tests."

Perceived cognitive difficulties were measured using Patient-Reported Outcomes Measurement Information System, and objective cognitive performance was assessed using the National Institutes of Health Toolbox V3 Cognition Battery.

"There was a range of cognitive difficulties among the patients in the study," Staab said. "Some were mild and indicated slight dysfunction, while others were more serious and indicated that some patients have slow thinking and trouble concentrating several times per day."

The results showed that lower pulmonary gas exchange may be associated with cognitive dysfunction, as well as lower gray matter and white matter volumes in patients with long COVID. In addition, the researchers observed significant relationships suggesting that increased cerebral blood flow is associated with decreased gas exchange in long COVID patients.

Staab said larger studies are needed to investigate the association between gas exchange and cerebral blood flow in long COVID.

"This relationship could be a compensatory mechanism where lower lung function is compensated by higher cardiac output and higher brain perfusion," he said. "It's also a possibility that the disease mechanism that impairs pulmonary gas exchange also leads to higher brain perfusion through downstream vascular injury in both lung and brain."

Based on the findings of this study, gas exchange abnormalities may help identify long COVID patients who require additional treatment or long-term management.

Other co-authors are Marrissa J. McIntosh, Ph.D., Jonathan L. Percy, B.S., Andrew D. Hahn, Ph.D., Natally AlArab, M.D., Conner J. Wharff, B.S. B.A. RT(R)(MR), Eric Bruening, M.S., Alejandro P. Comellas, M.D., Eric A. Hoffman, Ph.D., Carinda Linkenmeyer, M.A.E., Tara Lanning, B.S., and Karin F. Hoth, Ph.D.

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# Soccer Heading Damages Brain Regions Affected in CTE

## AT A GLANCE

- **Soccer heading may cause more damage to the brain than previously thought and was linked to worse verbal learning and the potential for delayed effects on brain function.**
- **Abnormalities were most prominent in the frontal lobe of the brain, an area most susceptible to damage from trauma.**
- **The findings also suggest that repeated head impacts that don't result in serious injury may still adversely affect the brain.**

CHICAGO – Soccer heading may cause more damage to the brain than previously thought, according to a study being presented next week at the annual meeting of the Radiological Society of North America (RSNA).

Heading is a widely used technique in soccer where the players control the direction of the ball by hitting it with their head. In recent years, research has been done that suggests a link between repeated head impacts and neurodegenerative diseases, such as chronic traumatic encephalopathy (CTE).

"The potential effects of repeated head impacts in sport are much more extensive than previously known and affect locations similar to where we've seen CTE pathology," said study senior author Michael L. Lipton, M.D., Ph.D., professor of radiology at Columbia University Irving Medical Center in New York. "This raises concern for delayed adverse effects of head impacts."

While prior studies have identified injuries to the brain's white matter in soccer players, Dr. Lipton and colleagues utilized a new approach to an advanced brain imaging technique called diffusion MRI to analyze microstructure close to the surface of the brain.

To identify how repeated head impacts affect the brain, the researchers compared brain MRIs of 352 male and female amateur soccer players, ranging in age from 18 to 53, to brain MRIs of 77 non-collision sport athletes, such as runners.

Soccer players who headed the ball at high levels showed abnormality of the brain's white matter adjacent to sulci, which are deep grooves in the brain's surface. Abnormalities in this region of the brain are known to occur in very severe traumatic brain injuries.

The abnormalities were most prominent in the frontal lobe of the brain, an area most susceptible to damage from trauma and frequently impacted during soccer heading. More repetitive head impacts were also associated with poorer verbal learning.

"Our analysis showed that the white matter abnormalities represent a mechanism by which heading leads to worse cognitive performance," Dr. Lipton said.

Most of the participants of the study had never sustained a concussion or been diagnosed with a traumatic brain injury. This suggests that repeated head impacts that don't result in serious injury may still adversely affect the brain.

"The study identifies structural brain abnormalities from repeated head impacts among healthy athletes," Dr. Lipton said. "The abnormalities occur in the locations most characteristic of CTE, are associated with worse ability to learn a cognitive task and could affect function in the future."

The results of this study are also relevant to head injuries from other contact sports. The researchers stress the importance of knowing the risks of repeated head impacts and their potential to harm brain health over time.

"Characterizing the potential risks of repetitive head impacts can facilitate safer sport engagement to maximize benefits while minimizing potential harms," Dr. Lipton said. "The next phase of the study is ongoing and examines the brain mechanisms underlying the MRI effects and potential protective factors."

Co-authors are Bluyé Demessie, A.B., M.S., Walter F. Stewart, Ph.D., Richard B. Lipton, M.D., Molly E. Zimmerman, Ph.D., Mimi Kim, Sc.D., Kenny Ye, Ph.D., Thomas Kaminski and Roman Fleysher, Ph.D.

This study was funded by the National Institutes of Health and The Dana Foundation.

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*Embargoed for release on Sunday, Dec. 1, 2024, at 4 p.m. ET*

# Umar Mahmood, M.D., Ph.D., Named RSNA President

CHICAGO – Umar Mahmood, M.D., Ph.D., was named president of the Radiological Society of North America (RSNA) Board of Directors today at the Society's annual meeting.

A radiologist at Massachusetts General Hospital (MGH) in Boston, Dr. Mahmood serves as chief of Nuclear Medicine and Molecular Imaging, where he oversees a service that spans multiple hospitals and facilities in the region. He is director of the Center for Precision Imaging and associate chair of Imaging Sciences in the Department of Radiology at MGH. Dr. Mahmood is also professor of radiology at Harvard Medical School. His career arc has broadly emphasized organizational leadership, research, clinical care and mentoring.

As RSNA president, Dr. Mahmood will support RSNA's work as a convener, connecting people globally through innovative research and education programs. He hopes to further RSNA's mission of advancing radiology research and technology to improve patient care, with a special focus on precision medicine.

"Radiology has always been first to embrace new approaches and technologies, leading to improved diagnostic capabilities and patient outcomes," Dr. Mahmood said. "RSNA is a leader in fostering radiology research and education to integrate these new approaches into clinical practice. Through advances in precision medicine, we will continue to work with our oncology colleagues to vastly improve cancer care in the coming years."

Dr. Mahmood earned his bachelor's degree from the California Institute of Technology, and his medical degree and doctorate in biophysics and physiology from Cornell University. After completing his doctoral and postdoctoral work in tumor physiology at Memorial Sloan Kettering Cancer Center, Dr. Mahmood went on to complete his radiology residency at MGH in 2001 and has since served on the faculty at MGH and Harvard Medical School.

A member of RSNA since 1997, Dr. Mahmood has served on numerous RSNA committees including the Annual Meeting Program Planning Committee, Committee on Scientific Affairs, Molecular Imaging Committee, Research Development Committee, and multiple RSNA journal Editor Search committees. He has served as chair for the RSNA Finance Committee, Grant Program Committee, Board Committee on International Affairs, and Molecular Imaging Scientific Abstract and Educational Exhibit Review Committees. He has served as associate editor and consultant to the editor for the journal *Radiology*.

Starting in 2016, Dr. Mahmood served six years on the RSNA Research and Education (R&E) Foundation Board of Trustees, which provides millions of dollars in funding for radiology research and education every year and ensures continued innovation in the field. He has served on the RSNA Board of Directors since 2017. Before becoming chair of the board in 2023, Dr. Mahmood was the RSNA Board Liaison for International Affairs, helping foster best practices and collaboration globally in radiology.

Dr. Mahmood's primary research interest over the last 30 years has been in molecular imaging and its application to guide precision medicine. He has authored more than 180 peer-reviewed research manuscripts and numerous reviews, chapters and editorials. He has been an invited presenter or course instructor at more than 130 regional, national and international meetings, seminars and conferences. He has been a principal investigator for numerous projects funded by the National Institutes of Health (NIH) that have utilized nuclear medicine and molecular imaging techniques to advance translational efforts to better understand drivers of cancer, including the tumor microenvironment, cancer signaling pathways, changes in cancer metabolism and the interaction of the immune system with tumors.

Dr. Mahmood is a Fellow of the American College of Radiology and Fellow of the Society of Nuclear Medicine and Molecular Imaging (SNMMI). He is an Honorary Member of the Italian Society of Medical and Interventional Radiology and an adjunct professor at the Medical University of Vienna in Austria. Dr. Mahmood received the SNMMI's first Minoshima-Pappas Transformative Leadership Award and received the Distinguished Investigator award from the Academy for Radiology and Biomedical Imaging Research (The Academy).

Dr. Mahmood served for four years as chair of the Board of Scientific Counselors of the Clinical Center of the NIH. He served on the Board of Directors of SNMMI and as chair of the SNMMI Scientific Program Committee. Dr. Mahmood also served on the Board of Directors of The Academy and on the Executive Committee of the International Society of Radiology.

During his career, Dr. Mahmood has had a longstanding commitment to growing the next generation of clinical radiologists and physician scientists. Trainees have come from around the world and from diverse backgrounds and experiences. He has directly guided more than 100 research mentees, many of whom have gone on to become academic medical faculty at top institutions.

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# Jeffrey S. Klein, M.D., Named Chair of the RSNA Board

CHICAGO – Jeffrey S. Klein, M.D., was named chair of the Radiological Society of North America (RSNA) Board of Directors today at the Society's annual meeting.

Dr. Klein, a renowned expert in lung cancer staging and detection, is the A. Bradley Soule and John P. Tampas Green and Gold Professor of Radiology at the University of Vermont College of Medicine, in Burlington, Vermont.

After receiving his bachelor's degree from Brooklyn College, Dr. Klein earned his medical degree at the State University of New York Health Downstate Medical Center. He completed an internship at the Staten Island University Hospital, a residency at the State University of New York (SUNY) Kings County Hospital Center in Brooklyn, and a fellowship in thoracic radiology at the University of California, San Francisco (UCSF) Medical Center.

As RSNA chair, Dr. Klein pledges to work with the board to further innovation and education in diagnostic imaging and image-guided intervention.

"The RSNA will continue to lead via our efforts to promote the best science and education through our leading journals, to connect industry leaders with our members, to provide core and cutting-edge educational opportunities for our discipline and to offer an outstanding annual scientific and technology-focused annual meeting experience for our attendees both in person and virtually," he said.

Dr. Klein began his academic radiology career in 1988 as a clinical instructor of radiology and assistant professor in residence at the UCSF School of Medicine. In 1990, he became an assistant professor in residence at the San Francisco General Hospital.

From 1993 to 1995, Dr. Klein was a clinical associate professor, chief of thoracic imaging and associate director of the residency training program in the Department of Radiology at St. Joseph's Hospital and Medical Center in Phoenix, Arizona. He then joined the University of Vermont College of Medicine, where he served as vice chair of the Department of Radiology from 1998 to 2000 and chief of thoracic imaging from 2000 to 2010. Dr. Klein was named to the endowed professorship in 2006. From 2005 to 2010, he served as associate dean for continuing medical education at the University of Vermont College of Medicine.

An RSNA member since 1984, Dr. Klein has served on numerous RSNA committees including the Scientific Program Committee, Education Exhibits Committee, Corporate Relations Committee, Digital Roadmap Content Steering Committee, Refresher Course Committee and Research and Education (R&E) Grant

Committee. He is chair of the Margulis Award for Scientific Excellence Committee and the Finance Committee. Dr. Klein has also served on the Education Council and is chair of the Publications Council.

In 2018, Dr. Klein joined the RSNA Board of Directors. He has served as RSNA Board Liaison for Publications, the Committee on Diversity, Equity and Inclusion, Public Information Committee, Professionalism Committee, Resident and Fellows Committee, Quality Improvement Committee, RSNA/American College of Radiology (ACR) Image Wisely Committee and RSNA/ACR Public Information Website Committee. He became Secretary-Treasurer in 2023.

Dr. Klein held several leadership positions with the Society of Thoracic Radiology (STR), where he served as president from 2005 to 2006. He served on the ACR committee on CT accreditation from 1998 to 2008 and as an examiner for the American Board of Radiology.

Dr. Klein was editor of RSNA's journal *RadioGraphics* from 2012 to 2020 and was editor-in-chief of the *Journal of Thoracic Imaging* from 1999 to 2004. He has been a manuscript reviewer for *Radiology* and *RadioGraphics*, as well as the *American Journal of Roentgenology*, *Journal of Thoracic Oncology*, *Cardiovascular and Interventional Radiology* and *Cancer*. Dr. Klein currently serves as consultant to the editor for *Radiology Advances*, RSNA's open access journal.

Dr. Klein is a recipient of the RSNA Honored Educator Award and the STR Lifetime Achievement Award. He received a *Radiology* Editor's Recognition Award for reviewing with special distinction in 2010, as well as *RadioGraphics* Editor's Recognition Award with special distinction (2023) and the *RadioGraphics* Editor's Recognition Award with distinction (2024). He was listed on Best Doctors in America in 2014, 2017 and 2019.

Esteemed for his dedication to radiology education, Dr. Klein has also received teaching awards from the UCSF Medical Center, the University of Vermont College of Medicine and SUNY Downstate.

Dr. Klein has authored nearly 130 research articles, reviews, chapters and editorials. He has been an invited author, presenter or lecturer at more than 140 regional, national and international meetings, seminars and conferences. Dr. Klein has authored 29 book chapters and has been a guest editor for *Interventional Chest Radiology*. He has also developed numerous materials for textbooks and multimedia and has presented several scientific sessions and posters.

Dr. Klein was part of an expert panel convened by the U.S. Department of Justice regarding the Radiation Exposure Compensation Act of 1990, a group that developed a protocol for high-resolution CT examinations of Navajo uranium miners.

From 2001 to 2005, Dr. Klein represented Vermont on the American College of Chest Physicians Council of Governors, and from 2002 to 2010, he was a member of the Data Safety and Monitoring Board for the Lung Cancer Screening Trial of the National Cancer Institute. He was elected to membership in the Fleischner Society for Thoracic Imaging and Diagnosis in 2011.

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# Hidden Fat Predicts Alzheimer's 20 Years Ahead of Symptoms

## AT A GLANCE

- **Researchers have linked visceral body fat in midlife with Alzheimer's disease up to 20 years before symptoms appear.**
- **Visceral fat is linked to reduced cerebral blood flow and the abnormal protein in the brain that is associated with Alzheimer's disease.**
- **Lifestyle modifications targeted at reducing the fat could influence the development of Alzheimer's disease.**

CHICAGO – Researchers have linked a specific type of body fat to the abnormal proteins in the brain that are hallmarks of Alzheimer's disease up to 20 years before the earliest symptoms of dementia appear, according to a study being presented today at the annual meeting of the Radiological Society of North America (RSNA). The researchers emphasized that lifestyle modifications targeted at reducing this fat could influence the development of Alzheimer's disease.

"This crucial result was discovered because we investigated Alzheimer's disease pathology as early as midlife—in the 40s and 50s—when the disease pathology is at its earliest stages, and potential modifications like weight loss and reducing visceral fat are more effective as a means of preventing or delaying the onset of the disease," said lead study author Mahsa Dolatshahi, M.D., M.P.H., post-doctoral research associate at Mallinckrodt Institute of Radiology (MIR) at Washington University School of Medicine in St. Louis, Missouri.

An estimated 6.9 million Americans, aged 65 and older, are living with Alzheimer's disease, according to the Alzheimer's Association. The association estimates this number could grow to 13 million by 2050, barring the development of medical breakthroughs to prevent or cure the disease.

For the study, the researchers focused on the link between modifiable lifestyle-related factors, such as obesity, body fat distribution and metabolic aspects, and Alzheimer's disease pathology.

A total of 80 cognitively normal midlife individuals (average age: 49.4 years, female: 62.5%,) were included in the study. Approximately 57.5% of participants were obese, and the average body mass index (BMI) of the participants was 32.31. The participants underwent brain positron emission tomography (PET), body MRI and metabolic assessment (glucose and insulin measurements), as well as a lipid (cholesterol) panel. MRI scans of the abdomen were performed to measure the volume of the subcutaneous fat (the fat under skin) and visceral fat (deep hidden fat surrounding the organs).

"We investigated the association of BMI, visceral fat, subcutaneous fat, liver fat fraction, thigh fat and muscle, as well as insulin resistance and HDL (good cholesterol), with amyloid and tau deposition in Alzheimer's disease," said Dr. Dolatshahi, a member of the Raji Lab at MIR's Neuroimaging Labs Research Center.

Thigh muscle scans were used to measure volume of muscle and fat. Alzheimer's disease pathology was measured using PET scans with tracers that bind to amyloid plaques and tau tangles that accumulate in the brains of people with Alzheimer's disease.

The findings revealed that higher levels of visceral fat were related to increased amyloid, accounting for 77% of the effect of high BMI on amyloid accumulation. Other types of fat did not explain obesity-related increased Alzheimer's pathology.

"Our study showed that higher visceral fat was associated with higher PET levels of the two hallmark pathologic proteins of Alzheimer's disease—amyloid and tau," Dr. Dolatshahi said. "To our knowledge, our study is the only one to demonstrate these findings at midlife where our participants are decades out from developing the earliest symptoms of the dementia that results from Alzheimer's disease."

The study also showed that higher insulin resistance and lower HDL were associated with high amyloid in the brain. The effects of visceral fat on amyloid pathology were partially reduced in people with higher HDL.

"A key implication of our work is that managing Alzheimer's risk in obesity will need to involve targeting the related metabolic and lipid issues that often arise with higher body fat," said senior study author Cyrus A. Raji, M.D., Ph.D., associate professor of radiology at MIR.

Although previous studies have shown the role of high BMI in damaging the cells of the brain, no similar study has investigated the differential role of visceral and subcutaneous fat or metabolic profile, especially in terms of Alzheimer's amyloid pathology as early as midlife, Dr. Dolatshahi pointed out.

"This study goes beyond using BMI to characterize body fat more accurately with MRI and, in so doing, reveals key insights about why obesity can increase risk for Alzheimer's disease," Dr. Dolatshahi said.

Drs. Raji, Dolatshahi and colleagues are also presenting a study at RSNA 2024 that shows how obesity and visceral fat reduce blood flow in the brain.

In that study, the researchers performed brain and abdominal MRI on cognitively normal midlife individuals with a wide range of BMI and compared whole-brain and regional cerebral blood flow on brain MRI in individuals with high vs. low visceral and subcutaneous fat. The high visceral fat group showed lower whole-brain blood flow. No significant difference was observed in cerebral blood flow in the groups with high vs. low subcutaneous fat.

"This work will have a considerable impact on public health because nearly three out of four Americans are overweight or obese," Dr. Raji said. "Knowing that visceral obesity negatively affects the brain opens up the possibility that treatment with lifestyle modifications or appropriate weight-loss drugs could improve cerebral blood flow and potentially lower the burden of and reduce the risk for Alzheimer's disease."

Other co-authors are Paul K. Commean, B.E.E., Mahshid Naghashzadeh, M.S., Sara Hosseinzadeh Kassani, Ph.D., Jake Weeks, B.S., Caitlyn Nguyen, B.S., Abby McBee-Kemper, B.S., Nancy Hantler, B.S., LaKisha Lloyd, M.Sc., Shaney Flores, M.S., Yifei Xu, M.S., Jingxia Liu, Ph.D., Claude B. Sirlin, M.D., Bettina Mittendorfer, Ph.D., Joseph E. Ippolito, M.D., Ph.D., John C. Morris, M.D., and Tammie L.S. Benzinger, M.D., Ph.D. This study was awarded the RSNA Trainee Research Prize.

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# Countertop Workers Exposed to Serious Lung Disease

## AT A GLANCE

- **Engineered stone countertop workers may develop atypical and advanced features of silicosis, a long-term lung disease.**
- **Silicosis causes gradually worsening lung function, leading to respiratory failure.**
- **Researchers warned that silicosis with atypical imaging features may be missed by doctors and lead to delays in diagnosis amid a resurgence of the disease.**

CHICAGO – Durable and attractive, engineered stone countertops are a popular feature in modern American kitchens, but the workers who build them are risking their health. A growing number of these countertop workers are developing silicosis, a serious and long-term lung disease, according to a study being presented today at the annual meeting of the Radiological Society of North America (RSNA).

"This is a new and emerging epidemic, and we must increase awareness of this disease process so we can avoid delays in diagnosis and treatment for our patients," said the study's lead author Sundus Lateef, M.D., diagnostic radiology resident at the University of California in Los Angeles.

Silicosis is caused by the inhalation of crystalline silica dust produced in construction, coal mining and other industries. The prognosis is poor, with gradually worsening lung function leading to respiratory failure. The disease also makes patients more vulnerable to infection in the lungs, chronic obstructive pulmonary disease, autoimmune disease and lung cancer.

In recent years, a resurgence of silicosis has been reported in engineered countertop workers. Engineered stone countertops are made from quartz aggregate held together with a resin binder. They contain substantially more crystalline silica than natural stone versions. Workers who cut, shape, grind and polish these countertops may be exposed to significant amounts of silica dust.

For the study, Dr. Lateef and colleagues studied the imaging features of silicosis at a large urban safety-net hospital outside of Los Angeles with few historic cases of the disease. The study group included 55 engineered stone countertop workers diagnosed with silicosis using available CT and pulmonary function tests.

In a preliminary analysis of 21 workers, 100% were male and Hispanic with median age of 43 years and a median exposure of 18 years. All patients were symptomatic. Patients commonly had atypical and advanced features of silicosis. Shortness of breath and cough were the most common symptoms.

Primary clinicians recognized silicosis at the initial encounter in only four of 21 cases (19%), while radiologists recognized it in seven of 21 cases (33%). Alternative diagnoses, such as infection, were initially suggested in most cases. Nearly half of the patients (48%) had atypical imaging features.

“Silicosis may present with atypical features that may catch radiologists off guard in practice regions where silicosis is not traditionally diagnosed, which can lead to delays in diagnosis,” Dr. Lateef said.

The results highlight a need for more awareness and better recognition of imaging features associated with silicosis.

“These new cases of silicosis demonstrate radiology findings different from the historical disease, and doctors may not be aware of the diagnosis when they see these images,” Dr. Lateef said.

Silicosis is preventable with workplace safety measures such as proper ventilation, wet cutting and sanding, and respiratory protection. However, research has shown that more than half of California workplaces exceed the maximum permissible exposure limit to silica dust during workplace inspections. Exacerbating the problem is the fact that many workers are Spanish-speaking Latino immigrants who are vulnerable to unsafe workplace conditions.

“There is a critical lack of recognition of exposure and screening for workers in the engineered stone manufacturing industry,” Dr. Lateef said. “There needs to be a push for earlier screening and advocacy for this vulnerable population, which in our case were Spanish-speaking immigrant workers.”

As part of an effort to improve screening and advocacy for workers, Dr. Lateef and colleagues are working on the ongoing California Artificial Stone and Silicosis (CASS) Project. The project aims to promote respiratory health among vulnerable workers in the state’s countertop fabrication industry.

Co-authors are Andrea Oh, M.D., Jonathan Hero Chung, M.D., Jane Fazio, M.D., Nader Kamangar, M.D., M.S., Sheiphali Gandhi, M.D., M.P.H., Robert J. Tallaksen, M.D., and Karoly Viragh, M.D.

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*Embargoed for release on Tuesday, Dec. 3, 2024, at 5:00 a.m. ET*

# Muscle Loss Could Increase Dementia Risk

## AT A GLANCE

- **Skeletal muscle loss may increase the risk of developing Alzheimer's disease dementia.**
- **Older adults with smaller skeletal muscles are about 60% more likely to develop dementia when adjusted for other known risk factors.**
- **Early detection of muscle loss through MRI could enable timely interventions, such as physical activity, resistance training and nutritional support.**

CHICAGO – Skeletal muscle loss is a risk factor for developing dementia, according to a study being presented today at the annual meeting of the Radiological Society of North America (RSNA).

Skeletal muscles make up about one-third of a person's total body mass. They are connected to the bones and allow for a wide range of movements. As people grow older, they begin to lose skeletal muscle mass.

Because age-related skeletal muscle loss is often seen in older adults with Alzheimer's disease (AD) dementia, this study aimed to examine whether temporalis muscle loss (a measure of skeletal muscle loss) is associated with an increased risk of AD dementia in older adults.

The temporalis muscle is located in the head and is used for moving the lower jaw. Studies have shown that temporalis muscle thickness and area can be an indicator of muscle loss throughout the body.

"Measuring temporalis muscle size as a potential indicator for generalized skeletal muscle status offers an opportunity for skeletal muscle quantification without additional cost or burden in older adults who already have brain MRIs for any neurological condition, such as mild dementia," said the study's lead author, Kamyar Moradi, M.D., postdoctoral research fellow in the Russell H. Morgan Department of Radiology and Radiological Sciences at Johns Hopkins University School of Medicine in Baltimore. "This is the first longitudinal study to demonstrate that skeletal muscle loss may contribute to the development of dementia."

For the multidisciplinary research study, a collaboration between the radiology and neurology departments at Johns Hopkins Medical Institutions, Dr. Moradi and colleagues used baseline brain MRI exams from the Alzheimer's Disease Neuroimaging Initiative cohort to quantify skeletal muscle loss in 621 participants without dementia (mean age 77 years).

The researchers manually segmented the bilateral temporalis muscle on MRI images and calculated the sum cross-sectional area (CSA) of these muscles. Participants were categorized into two distinct groups: large CSA (131 participants) and small CSA (488 participants). Outcomes included subsequent AD dementia incidence, change in cognitive and functional scores, and brain volume changes between the groups. Median follow-up was 5.8 years.

Based on their analysis, a smaller temporalis CSA was associated with a higher incidence risk of AD dementia. Furthermore, a smaller temporalis CSA was associated with a greater decrease in memory composite score, functional activity questionnaire score and structural brain volumes over the follow-up period.

“We found that older adults with smaller skeletal muscles are about 60% more likely to develop dementia when adjusted for other known risk factors,” said the study’s co-senior author and professor of neurology, Marilyn Albert, Ph.D.

According to Shadpour Demehri, M.D., co-senior author and professor of radiology, the study demonstrates that this muscle change can be opportunistically analyzed through any conventional brain MRI, even when conducted for other purposes, without incurring additional costs or burdens.

Dr. Albert pointed out that early detection through readily available brain MRI could enable timely interventions to address skeletal muscle loss, such as physical activity, resistance training and nutritional support.

“These interventions may help prevent or slow down muscle loss and subsequently reduce the risk of cognitive decline and dementia,” Dr. Demehri said.

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Other co-authors are Hanzhang Lu, Ph.D., Yuxin Zhu, Ph.D., Soheil Mohammadi, M.D., Sara Momtazmanesh, M.D., and Eleanor M. Simonsick, Ph.D.

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*Embargoed for release on Tuesday, Dec. 3, 2024, at 5:00 a.m. ET*

# Minimally Invasive Procedure Relieves Knee Arthritis

## AT A GLANCE

- **Genicular artery embolization (GAE) is a minimally invasive procedure that provides effective pain relief and inhibits progression of knee osteoarthritis.**
- **Patients treated with GAE had significant reduction in pain and greatly improved quality of life after one year.**
- **With GAE, patients might delay or avoid knee replacement surgery.**

CHICAGO – A minimally invasive procedure provides significant relief from knee pain and may prevent the need for knee replacement surgery in people with osteoarthritis, according to a study being presented this week at the annual meeting of the Radiological Society of North America (RSNA).

"This study addresses osteoarthritis, which is a significant public health issue and the leading cause of chronic pain and disability worldwide," said the study's lead author, Florian Nima Fleckenstein, M.D., interventional radiologist at Charité – University Hospital Berlin in Germany. "With millions of people affected by knee osteoarthritis, particularly in aging populations, finding effective, minimally invasive treatments is critical."

Osteoarthritis, a chronic, degenerative and progressive condition, is the most common cause of chronic joint disorders. According to the World Health Organization, knee osteoarthritis affects over 365 million adults worldwide.

Most available therapies, such as pain medication and steroid injections, only mask the symptoms of osteoarthritis. They don't slow progression of the disease. As osteoarthritis worsens and conservative treatments become ineffective, many people turn to joint replacement surgery.

Genicular artery embolization (GAE) is an innovative minimally invasive therapy for patients with symptomatic knee osteoarthritis. The genicular arteries have several branches that form a network around the knee joint. These vessels are altered in patients suffering from osteoarthritis. In GAE, an interventional radiologist injects small particles into selected branches that correspond to the site of knee pain to block blood flow to that area. Embolization of the abnormal blood vessels helps to disrupt the cycle of inflammation, cartilage destruction and sensory nerve growth that characterizes osteoarthritis.

For the study, Dr. Fleckenstein and colleagues conducted a retrospective analysis of 403 cases from patients (age 40 to 90) with moderate to severe knee osteoarthritis that didn't respond to conservative treatments. All patients underwent GAE at the Charité – University Hospital Berlin. The study was designed to evaluate both the safety and efficacy of GAE across a broad spectrum of osteoarthritis severities. The effectiveness of the procedure was measured using the Visual Analog Scale and the Knee Injury and Osteoarthritis Outcome

Score. These standardized scores, which measure pain and quality of life, were recorded at baseline and during follow-up visits at six weeks, three months, six months and one-year post-procedure.

Technical success was achieved in 100% of procedures. Temporary slight skin discoloration and mild knee pain immediately after the procedure were noted in 18% of all cases. No severe complications were reported. The quality-of-life index and pain score improved by 87% and 71%, respectively, at one-year follow-up.

The findings show that GAE is a safe and effective treatment option across all severity grades of knee osteoarthritis, including advanced cases where other treatments have very limited efficacy.

“Our study found that GAE can effectively reduce knee pain and improve quality of life early after the treatment, with these benefits being maintained over the long term, especially for people who haven’t had success with other treatments like physical therapy or pain medications,” Dr. Fleckenstein said. “This could potentially offer a new lease on life for many patients who suffer from debilitating pain and mobility issues, caused by osteoarthritis.”

However, the study also showed that GAE is particularly effective in the early stages of knee osteoarthritis. This indicates that early intervention could potentially delay or even prevent disease progression, reducing the need for more invasive treatments, such as surgery.

The researchers hope that by demonstrating the procedure’s success in a large and diverse patient population, the study could influence medical practice and policy, encouraging broader adoption of GAE in clinical settings worldwide.

“GAE has the potential to reduce the need for more invasive surgeries, lower health care costs and significantly improve the quality of life for countless individuals suffering from knee osteoarthritis,” Dr. Fleckenstein said.

He and his team plan to continue their research on degenerative joint disorders to provide patients with new options in the field of interventional radiology.

Co-authors are Timo Alexander Auer, M.D., Bernd Hamm, M.D., Bernhard Gebauer, M.D., and Federico Collettini, M.D. This study was awarded the RSNA Trainee Research Prize.

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# Eating High-Processed Foods Impacts Muscle Quality

## AT A GLANCE

- **The more ultra-processed foods people consumed, the more intramuscular fat they had in their thigh muscles, regardless of caloric intake or physical activity.**
- **Consuming ultra-processed foods, such as cereals, frozen meals, soft drinks and packaged snacks, may also raise knee osteoarthritis risk.**
- **This is the first imaging study looking into the relationship between skeletal muscle quality and quality of diet.**

CHICAGO – A diet high in ultra-processed foods is associated with higher amounts of fat stored inside thigh muscles, regardless of the amount of calories consumed or level of physical activity, according to a study being presented today at the annual meeting of the Radiological Society of North America (RSNA). Higher amounts of intramuscular fat in the thigh could also increase the risk for knee osteoarthritis.

The use of natural and minimally processed ingredients in many modern diets has decreased, more often being replaced with ingredients that have been industrially processed, artificially flavored, colored or chemically altered.

Foods such as breakfast cereals, margarines/spreads, packaged snacks, hot dogs, soft drinks and energy drinks, candies and desserts, frozen pizzas, ready-to-eat meals, mass-produced packaged breads and buns, and more, include synthesized ingredients and are highly processed.

These ultra-processed foods usually have longer shelf lives and are highly appealing, as they are convenient and contain a combination of sugar, fat, salt and carbohydrates which affect the brain's reward system, making it hard to stop eating.

For the study, researchers set out to assess the association of ultra-processed food intake and their relationship to intramuscular fat in the thigh.

"The novelty of this study is that it investigates the impact of diet quality, specifically the role of ultra-processed foods in relation to intramuscular fat in the thigh muscles assessed by MRI," said author Zehra Akkaya, M.D., researcher and former Fulbright Scholar in the Department of Radiology and Biomedical Imaging at the University of California, San Francisco. "This is the first imaging study looking into the relationship between MRI-based skeletal muscle quality and quality of diet."

For the study, researchers analyzed data from 666 individuals who participated in the Osteoarthritis Initiative who were not yet affected by osteoarthritis, based on imaging. The Osteoarthritis Initiative is a nationwide research study, sponsored by the National Institutes of Health, that helps researchers better understand how to prevent and treat knee osteoarthritis.

“Research from our group and others has previously shown that quantitative and functional decline in thigh muscles is potentially associated with onset and progression of knee osteoarthritis,” Dr. Akkaya said. “On MRI images, this decline can be seen as fatty degeneration of the muscle, where streaks of fat replace muscle fibers.”

Of the 666 individuals, (455 men, 211 women) the average age was 60 years. On average, participants were overweight with a body mass index (BMI) of 27. Approximately 40% of the foods that they ate in the past year were ultra-processed.

The researchers found that the more ultra-processed foods people consumed, the more intramuscular fat they had in their thigh muscles, regardless of energy (caloric) intake.

“In an adult population at risk for but without knee or hip osteoarthritis, consuming ultra-processed foods is linked to increased fat within the thigh muscles,” Dr. Akkaya said. “These findings held true regardless of dietary energy content, BMI, sociodemographic factors or physical activity levels.”

Targeting modifiable lifestyle factors—mainly prevention of obesity via a healthy, balanced diet and adequate exercise—has been the mainstay of initial management for knee osteoarthritis, Dr. Akkaya noted.

“Osteoarthritis is an increasingly prevalent and costly global health issue. It is the largest contributor to non-cancer related health care costs in the U.S. and around the world,” Dr. Akkaya said. “Since this condition is highly linked to obesity and unhealthy lifestyle choices, there are potential avenues for lifestyle modification and disease management.”

By exploring how ultra-processed food consumption impacts muscle composition, this study provides valuable insights into dietary influences on muscle health.

“Understanding this relationship could have important clinical implications, as it offers a new perspective on how diet quality affects musculoskeletal health,” Dr. Akkaya said.

Co-authors are Gabby B. Joseph, Ph.D., Katharina Ziegeler, M.D., Wynton M. Sims, John A. Lynch, Ph.D., and Thomas M. Link, M.D., Ph.D.

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*Embargoed for release on Wednesday, Dec. 4, 2024, at 5:00 a.m. ET*

# Study Exposes High Injury Rates in Transgender Women

## AT A GLANCE

- **Injury rates among transgender women in the study were significantly higher than injury rates among cisgender women.**
- **Transgender women in the study group suffered eight times as many head injuries, 36 times as many facial injuries and five times as many chest injuries.**
- **Nearly 42% of transgender women with visible injuries on imaging reported interpersonal violence, and more than 28% reported intimate partner violence.**

CHICAGO – A new study found that injury rates among transgender women are significantly higher than injuries among cisgender women, based on radiological imaging. The findings will be presented today at the annual meeting of the Radiological Society of North America (RSNA).

'Cisgender' is a term used to describe people whose gender identity matches the sex they were assigned at birth, while 'transgender' describes people whose gender identity differs from the sex they were assigned at birth.

"Transgender women have been reported to experience alarmingly high rates of violence," said lead researcher Rohan Chopra, an undergraduate student at Northeastern University in Boston and a research intern at the Trauma Imaging Research and Innovation Center (TIRIC) at Brigham and Women's Hospital. "They also frequently endure discrimination, hate crimes, psychological abuse and social isolation, which not only increases their vulnerability but also creates significant barriers in reporting violence and escaping abusive situations."

The first-of-its-kind study, conducted by TIRIC, employs a case-control design to quantify and compare the burden of injuries evident on imaging between transgender women and a control group of cisgender women.

For the study, researchers selected a cohort of 263 trans-female patients, aged 18 and older, from the Research Patient Data Registry. All patients had undergone at least one imaging exam at a Massachusetts General Brigham affiliated hospital. From the same registry, a control group was selected of 525 cisgender female control patients, matched for age, race and ethnicity, who also underwent at least one imaging exam.

Among the transgender women, 67 (25.4%) sustained 141 injuries, compared to 77 (14.7%) of cisgender women who sustained 98 injuries. Transgender women in the study group suffered eight times as many head injuries as the controls, 36 times as many facial injuries and five times as many chest injuries.

"Transgender women were five times more likely to undergo imaging in the emergency department compared to cisgender women and were nearly twice as likely to get imaged overnight and on weekends,"

Chopra said. “Most importantly, transgender women were three times as likely to sustain injuries compared to cisgender women.”

Of the 67 transgender women with injuries confirmed by a radiological exam, 41.8% (28 of 67) reported being involved in interpersonal violence and 28.4% (19 of 67) confirmed intimate partner violence (IPV). However, 25 (37.3%) of the 67 transgender patients were not screened for IPV.

Two radiologists, blinded to the purpose of the study and the transgender status, were also asked to predict the likelihood of IPV based on the radiology reports. The radiologists correctly identified IPV in about one-third of the transgender individuals who reported it.

“The significantly higher injury rates in transgender women, particularly to the head, face and chest, with frequent presentations to emergency departments indicate an elevated risk of violence and highlight gaps in preventive care,” said Bharti Khurana, M.D., M.B.A., the study’s principal investigator and founder and director of TIRIC. “By recognizing these patterns, radiologists can help identify at-risk patients and facilitate timely IPV screening and support for this vulnerable population.”

Other co-authors are Krishna Patel, M.P.H., Tatiana C. Rocha, M.D., Maria Duran-Mendicuti, M.D., Jessica C. Loftus, L.I.C.S.W., Jacqueline Savage Borne, L.I.C.S.W., Lauren Kourabas, L.I.C.S.W., Bernard Rosner, Ph.D., M.S., and Ole-Petter R. Hamnvik, M.D.

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# Women Pay for AI to Boost Mammogram Findings

## AT A GLANCE

- **Women choosing to enroll in a self-pay, AI-enhanced breast cancer screening program were 21% more likely to have cancer detected.**
- **A self-pay AI-powered screening mammography program was offered to patients across 10 clinical practices ranging from a few sites up to 64 sites at the largest practice.**
- **Out of the 747,604 women who underwent screening mammography over an initial 12-month period, the overall cancer detection rate was substantially higher for women enrolled in the self-pay AI program.**

CHICAGO – More than a third of women across 10 health care practices chose to enroll in a self-pay, artificial intelligence (AI)-enhanced breast cancer screening program, and the women who enrolled were 21% more likely to have cancer detected, according to research being presented today at the annual meeting of the Radiological Society of North America (RSNA).

AI has shown great promise in mammography as a "second set of eyes" for radiologists providing decision support, risk prediction and other benefits. Despite its promise, AI is not yet reimbursed by insurance, which likely is slowing its adoption in the clinic. Some practices have elected to offer enhanced workflows enabled by AI at additional cost, much like what was done when digital breast tomosynthesis was originally deployed.

For the study, researchers investigated the impact of AI—including a safeguard review—as a self-pay option in screening mammography. A self-pay, AI-powered screening mammography program was offered to patients across 10 clinical practices, ranging from a few sites up to 64 sites at the largest practice. Women who enrolled had U.S. Food and Drug Administration-compliant AI software applied to their mammograms. An expert breast radiologist provided a third, safeguard review in cases where there was discordance between the first reviewer and the AI.

Out of the 747,604 women who underwent screening mammography over an initial 12-month period, the overall cancer detection rate was on average 43% higher for enrolled women than for unenrolled women. The pattern of a substantially higher cancer detection rate in enrolled women was observed at all 10 practices.

Further analysis attributed 21% of the increase in cancer detection to the AI program. The researchers credited the remaining 22% increase in detection to the fact that higher-risk patients chose to enroll more frequently.

"These data indicate that many women are eager to utilize AI to enhance their screening mammogram, and when AI is coupled with a safeguard review, more cancers are found," said study senior author Gregory Sorensen, M.D., from DeepHealth Inc. in Somerville, Massachusetts.

The recall rate—the rate at which women were called back for additional imaging—was 21% higher for enrolled versus unenrolled women. Relatedly, the positive predictive value for cancer was 15% higher for the enrolled women, indicating that each recall resulted in more cancer diagnoses in the enrolled population.

"This is the first report on results from a program that provides an AI-powered enhanced review that patients can elect to enroll in," said study lead author Bryan Haslam, Ph.D., from DeepHealth. "The AI-driven enhanced review program leverages AI in a novel workflow to ensure women with suspicious findings get expert level care that could help detect many more breast cancers early. The number of women electing for this program is now at 36% and growing, and the rate of cancer detection continues to be substantially higher for those women."

In the future, the researchers hope to better quantify the benefit of the AI-driven safeguard review with prospective randomized controlled trials that would eliminate the self-selection bias and provide the highest level of evidence.

Co-authors are Leeann Louis, Ph.D., Jacqueline S. Holt, M.D., and Janet M. Storella, M.D.

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**ADDITIONAL STORY IDEAS**
**RSNA 110th SCIENTIFIC ASSEMBLY AND ANNUAL MEETING**

In addition to the presentations described in RSNA news releases, the following presentations have been identified as particularly newsworthy. Times, locations and abstracts for the presentations can be found in the RSNA 2024 Meeting Program.

***Scientific Presentations***

Sun. Dec. 1, #S4-SSNR02-4, *Changes of the Glymphatic System in Individuals Exposed to High Versus Low Blast Impact*, Azza Reda, M.D.

Sun. Dec. 1, #S4-SSNR01-6, *Association of Childhood Neighborhood Depravation Index with Metrics of Brain White Matter Microstructure Integrity During Adolescence*, Hector Acosta Rodriguez, B.S.

Mon. Dec. 2, #M6-SSMS01-3, *Can Opportunistic AI-Based Automated Measures of Abdominal Fat, Muscles, and Waist Circumference on Emergency Abdomen CT in 30-39-Year-Old Predict Future Diabetes and Hypertension? A Multicenter Multi-Year Follow-Up Study,* Emiliano Garza Frias, M.D.

Mon. Dec 2, #M7-SSNR05-3, *Brain Arteriolosclerosis Is Associated with Lower Gray Matter Volume*, Ana Tomash

Tues. Dec. 3, #T3-SSER01-1, *Imaging Utilization of Self-Neglect Mandate Patients in the Emergency Room*, Sharmila Duraisamy, M.D.

Tues. Dec. 3, #T3-SSER01-2, *Radiologic Assessment Enables Early Detection of Intimate Partner Violence*, Patrick Lenehan, M.D., Ph.D.

Tues. Dec 3, #T7-SSMK07-6, *Hormone Replacement Therapy and Muscle Loss in Post-Menopausal Women: Longitudinal Analysis from the Baltimore Longitudinal Study of Aging Using Repeated Dual-Energy X-ray Absorptiometry,* Elena Ghotbi, M.D.

Wed. Dec. 4, #W7-SSBR09-1, *Comparative 15-Year Performance of Mammography Artificial Intelligence, Clinical Breast Cancer Risk, and Polygenic Risk Models*, Vignesh Arasu, M.D., Ph.D.

***Scientific Posters***

Sun. Dec. 1, #S3A-SPIN-4, *Patient Privacy Leaks in Large Language Models after Federated Training on Medical Reports*, Santhosh Parampottupadam, Ph.D., M.Sc.

Sun. Dec. 1, #S3A-SPNR-8, *Functional MRI Findings of Transcranial Magnetic Stimulation in Patients with Obsessive-Compulsive Disorder: A Systematic Review*, Mahan Shafie

Sun. Dec. 1, #S3A-SPNR-9, *The Link Between Hepatic Fat and Neuroinflammation in Midlife Obesity*, Mahsa Dolatshahi, M.D., M.P.H.

Mon. Dec. 2, #M5A-SPPD-1, *Maternal Tobacco Smoking Associated with Placenta Volume Differences and Altered Texture Features*, Jonathan Class, M.D.

Tues. Dec. 3, #T5A-SPMK-4, *Impact of Thigh Muscle and Fat Volume on the 4-Year Progression of Knee Osteoarthritis in Obese Participants Who Engage in Physical Activity,* Upasana Upadhyay Bharadwaj, M.D.

Wed. Dec. 4, #W5A-SPNR-3, *Reduced Brain Ventricular Volume Observed in Fetuses with Prenatal Opioid Exposure,* Ramana V. Vishnubhotla, Ph.D.

Wed. Dec. 4, #W5A-SPNR-14, *Correlation of Cerebral Blood Flow and Inflammatory Cytokine Alterations with Symptom Severity in Premenstrual Syndrome*, Kaixuan Zhou

Thurs. Dec. 5, #R5A-SPIR-6, *Virtual Reality Experience in Interventional Radiology: IRVARI Study. A Randomized Controlled Tria*l, Audrey Fohlen, M.D., Ph.D.

Thurs. Dec. 5, #R5A-SPNR-15, *Volume Reduction of Hippocampal and Amygdala Subregions in Pregnant Women*, Na Wang

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# LEARNING CENTER THEATER HIGHLIGHTS
# RSNA 110th SCIENTIFIC ASSEMBLY AND ANNUAL MEETING

At RSNA 2024, 120 scientific sessions centered on cutting-edge breakthroughs in radiology in the topics of Low-Field and Mobile MRI, Theranostics, Multiomic and Multicenter Radiology AI, and Value Based, Equitable and Sustainable Radiology will be presented in the Learning Center at RSNA 2024. Sixteen studies identified as particularly newsworthy are highlighted below. Please consult the RSNA 2024 Meeting Program for abstracts and times.

Sun. Dec. 1, #S1-STCE1-1, *Power Grid Independent Low Field MRI*, Hans-Martin Klein, M.D., Ph.D.

Sun. Dec. 1, #S2-STCE2-1, *Climate Resilience and Environmental Sustainability in Radiology: Association Between Long-Term Ambient Air Pollution and Myocardial Fibrosis Assessed by Cardiac MRI*, Jacques Du Plessis, M.B.Ch.B.

Sun. Dec. 1, #S2-STCE2-2, *Disparities of Access to Medical Imaging Technology Across the U.S. as a Function of Social Vulnerability*, Isabel Montero

Sun. Dec. 1, #S5-STCE1-2, *Three Interventions, Three Villages, One Goal – Health Equity*, Komal Verma Saluja, M.B.B.S.

Mon. Dec. 2, #M2-STCE1-3, *Initial Data from a Screening Mammography Program Inside SuperWalmart*, Matthew McCabe, Ph.D.

Mon. Dec. 2, #M2-STCE1-2, *Breast Cancer Artificial Intelligence Algorithm Improves Cancer Detection Rate Equitably Across Race and Ethnicity*, Leeann Louis, Ph.D.

Mon. Dec. 2, #M3-STCE1-1, *Exploring Anatomical Race Differences in Mammographic Images Using AI: Preliminary Results*, Tamerlan Mustafaev, M.D.

Mon. Dec. 2, #M6-STCE1-1, *Evaluation of the Glymphatic System in Migraine with Aura Patients Based Multimodal fMRI*, Xirui Duan

Mon. Dec. 2, #M7-STCE1-1, *Detecting Myelin Loss at 0.064T Using a Novel Myelin Water Imaging Technique: A Multiple Sclerosis Case Study*, Hanwen Liu

Tues. Dec. 3, #T2-STCE1-1, Low-Field (64mT) *Portable Brain MRI in Hospitalized and Emergency Department Patients: Real-World Experience from Our First Two Years*, Amy Lin, FRCPC

Tues., Dec. 3, #T6-STCE1-1, *Discovery of High-Risk Clinical Factors that Accelerate Brain Aging in Adults: Evidence from a Population-Based Machine-Learning Study*, Jing Sun, M.D.

Tues. Dec. 3, #T7-STCE1-1, *The Safety and Efficacy of Intra-Arterial Mesenchymal Stem Cell Injection in the Treatment of Knee Osteoarthritis: A One-Year Follow-Up Study*, Hossein Ghanaati, M.D.

Wed. Dec. 4, #W2-STCE2-1, *Prediction of Amyloid Positivity in Parkinson's Disease Using the Early-Phase 18F-FP-CIT PET Images*, Suhong Kim, M.D., Ph.D.

Wed. Dec. 4, #W3-STCE1-3, *Beyond BMI: AI-Driven Insights on Body Composition's Impact on Brain Health*, Soojin Lee

Thurs. Dec. 5, #R6-STCE2-2, *Deep Learning-Accelerated MR Imaging in Muscle Injuries of Professional Soccer Athletes: Enhancing Efficiency and Reducing Costs in Radiology*, Scherwin Mahmoudi, M.D.

Thurs. Dec. 5, #R7-STCE1-1, *Transcribing Multilingual Radiologist-Patient Dialogue into Mammography Reports Using AI: A Step Towards Patient-Centric Radiology*, Amit Gupta, M.D., M.B.B.S.

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NEWS

# RSNA Fosters AI Research, Education

The Radiological Society of North America (RSNA) is a trusted source at the forefront of the practical and ethical application of artificial intelligence (AI) in medical imaging.

The RSNA Imaging AI Certificate Program—the first-ever radiology-specific AI certificate program—blends a case-based curriculum with practical application and delivers a pathway for all radiologists to understand how to leverage AI for their practices and careers.

RSNA's peer-reviewed journal, *Radiology: Artificial Intelligence*, highlights emerging AI research in the field of imaging across multiple disciplines.

RSNA's AI Challenges spur the creation of AI tools for radiology to improve patient care.

The RSNA Medical Imaging Resource for AI (MIRA) data repository provides annotated medical imaging datasets to support research in medical imaging, focusing on artificial intelligence. MIRA datasets were assembled for RSNA's ongoing series of AI challenge competitions. They are made available at no cost for non-commercial research.

RSNA's AI Community allows imaging professionals and AI researchers to connect and discuss AI advances and challenges, while RSNA's comprehensive education program offers in-person and online AI learning opportunities throughout the year.

## RSNA 2024 AI HIGHLIGHTS

RSNA 2024 has an abundance of papers, posters, courses and education exhibits spotlighting AI and machine learning applications.

**AI Showcase**
The AI Showcase is the center of all the latest imaging AI technology at RSNA 2024. Connect with industry leaders and visit more than 100 exhibitor booths to see new products and technical solutions in action. Located within the showcase is the AI Theater, where attendees can view daily industry presentations from companies highlighting innovations that point to the future of AI.

**Radiology Reimagined Demo**
"Radiology Reimagined: AI, innovation and interoperability in practice," features a demonstration of new AI technologies and integration standards needed to embed AI into the diagnostic radiology workflow. The interactive exhibit, located within the AI Showcase, will enable attendees to introduce and scale AI into their radiology practices.

**RSNA AI Challenge Recognition Event**
A recognition event will be held Dec. 2, 4 – 5 p.m. in the AI Theater for the teams who submitted the highest-scoring algorithms during the 2024 RSNA Lumbar Spine Degenerative Classification AI Challenge.

In an effort to further AI research and initiatives, RSNA has led AI Challenges since 2015. Using curated data, these challenges serve to improve the efficiency and accuracy of AI capabilities in radiology and help assess how AI tools will perform in clinical settings.

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**110th SCIENTIFIC ASSEMBLY AND ANNUAL MEETING**
**RADIOLOGICAL SOCIETY OF NORTH AMERICA**

Sunday, December 1 – Thursday, December 5, 2024
McCormick Place, Chicago, Illinois
(as of 10/21/2024)

## RSNA FACTS

- RSNA has over 51,336 members in 157 countries.
- The RSNA Scientific Assembly and Annual Meeting is the premier annual radiology forum in the world.
- RSNA has six medical journals.

  Editors:
  - *Radiology,* Linda Moy, M.D.
  - *RadioGraphics*, Christine (Cooky) O. Menias, M.D.
  - *Radiology: Artificial Intelligence*, Charles E. Kahn Jr., M.D., M.S.
  - *Radiology: Cardiothoracic Imaging*, Suhny Abbara, M.D.
  - *Radiology: Imaging Cancer*, Gary D. Luker, M.D.
  - *Radiology Advances*, Susanna I. Lee, M.D., Ph.D.
    (Open access, published by Oxford University Press)

- RSNA offers a comprehensive collection of online continuing education courses covering every subspecialty in radiology.
- Since 1984, the RSNA Research & Education (R&E) Foundation has awarded more than $84 million in grant funding for over 1,900 grant projects.
- RSNA employs 272 people.
- RSNA headquarters is located at 820 Jorie Blvd., Oak Brook, Ill.

# RSNA ANNUAL MEETING FACTS

(as of 10/21/24, some numbers subject to change)

RSNA's Scientific Assembly and Annual Meeting is the world's premier scientific and educational forum in radiology. It has been held consecutively in Chicago since 1985. McCormick Place was first used in 1975.

Facts about RSNA 2024 include:

- 5 days of educational programs for radiologists, radiation oncologists, physicists in medicine, radiologic technologists and allied healthcare professionals
- 702 technical exhibits occupying 409,100 square feet at McCormick Place
- 121 first-time RSNA exhibitors
- 868 scientific papers in the following subspecialties: breast; cardiac; chest; emergency radiology; gastrointestinal; genitourinary; head & neck; informatics; interventional; multisystem; musculoskeletal; neuroradiology; noninterpretive skills/practice management; nuclear medicine/molecular imaging; pediatric; physics; radiation oncology; OB/gynecology; and vascular
- Over 300 education courses and 7 plenary sessions
- 1,548 education exhibits and 1,761 scientific posters featured in the Lakeside Learning Center
- 120 Learning Center Theater presentations

RSNA is committed to hosting a sustainable annual meeting. For more than two decades, we have been updating our processes and making changes to ensure the biggest week in radiology is environmentally mindful and socially responsible. Together, we can minimize our impact.

Learn about the key initiatives RSNA and our partners are implementing to create a more sustainable event.

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# RSNA 2024
# Industry Presentations

## Sunday, Dec. 1

**The risks and opportunities of radiology AI: Eden** | IS1-AI101
Session Type: AI Theater Presentations (non-CME)
10:30 AM - 10:50 AM CST

**uAI Solution for Healthcare: United Imaging Intelligence Co., Ltd.** | IS3-AI103
Session Type: AI Theater Presentations (non-CME)
11:30 AM - 11:50 AM CST

**AI-Driven Radiology Advancements: Elevating Accuracy and Efficiency Not all AI is created equal. RapidAI's clinical depth provides radiology professionals with value beyond triage, on a platform built for continued innovation: RapidAI** | IS1-LL104
Session Type: Lunch & Learns (non-CME)
11:45 AM - 12:45 PM CST

**Charting Your Course to Cloud Enterprise Imaging: GE HealthCare (RSVP Required)** | IS1-LL102
Session Type: Lunch & Learns (non-CME)
11:45 AM - 12:45 PM CST

**Lunch & Learn: AIRS Medical** | IS1-LL101
Session Type: Lunch & Learns (non-CME)
11:45 AM - 12:45 PM CST

**Navigating Breast Localization: From Imaging to Surgery: Hologic, Inc** | IS1-LL103
Session Type: Lunch & Learns (non-CME)
11:45 AM - 12:45 PM CST

**Limitless Excellence: Foundations for Transformative Nuclear Medicine Centers - GE HealthCare** | IS1-CE101
Session Type: Innovation Theater Presentations (non-CME)
12:00 PM - 12:45 PM CST

**Is Your AI an All-Star or Riding the Bench? Let's Measure the Impact! Aidoc** | IS4-AI104
Session Type: AI Theater Presentations (non-CME)
12:00 PM - 12:20 PM CST

**AI Theater: ScanDiags** | IS5-AI105
Session Type: AI Theater Presentations (non-CME)
12:30 PM - 12:50 PM CST

**AI Safety Net—Driving Diagnostic Error Correction and Reduced Med-Mal Exposure: vRad (Virtual Radiologic)** | IS6-AI106
Session Type: AI Theater Presentations (non-CME)
1:00 PM - 1:20 PM CST

**Multi-Beam S-ray Sources (MBX) in Medical Imaging: Varex Imaging** | IS6-IT106
Session Type: Innovation Theater Presentations (non-CME)
1:00 PM - 1:20 PM CST

**AI Theater: Raidium** | IS7-AI107
Session Type: AI Theater Presentations (non-CME)
1:30 PM - 1:50 PM CST

**Improving the Patient Experience with Embedded Finance. Royal Health, Inc.** | IS7-IT107
Session Type: Innovation Theater Presentations (non-CME)
1:30 PM - 1:50 PM CST

**Empowering the Next Generation of Diagnostic AI: The deepcOS Vision: deepc** | IS8-AI108
Session Type: AI Theater Presentations (non-CME)
2:00 PM - 2:20 PM CST

**Enabling Connected Care in Today's Diagnostic Networks: GE HealthCare** | IS9-IT109
Session Type: Innovation Theater Presentations (non-CME)
2:00 PM - 2:20 PM CST

**A Case Study in Creating Safe and Unbiased Medical Devices with Naitive Technologies: Gradient Health** | IS10-IT110
Session Type: Innovation Theater Presentations (non-CME)
2:30 PM - 2:50 PM CST

**AI assisted Systemness for Augmenting Radiology Workflow: Siemens Healthineers** | IS9-AI109
Session Type: AI Theater Presentations (non-CME)
2:30 PM - 2:50 PM CST

**AI Theater: AIRS Medical (Sunday)** | IS10-AI110
Session Type: AI Theater Presentations (non-CME)
3:00 PM - 3:20 PM CST

**Artificial intelligence research experiences on neurodegenerative disease using VUNO-Med DeepBrain and future direction: VUNO** | IS11-AI111
Session Type: AI Theater Presentations (non-CME)
3:30 PM - 3:50 PM CST

**Innovation Theater: Agamon Health** | IS12-IT112
Session Type: Innovation Theater Presentations (non-CME)
3:30 PM - 3:50 PM CST

## Monday, Dec. 2

**The future of Enterprise Imaging & Integrated Diagnostics: Philips** | IM1-VP101
Session Type: Virtual Industry Presentations (non-CME)
7:00 AM - 8:00 AM CST

**Advancing MRI: The Impact of Gadopiclenol in Clinical Practice: Presented by Northwest Imaging Forums (educational grant provided by Bracco Diagnostics Inc)** | IM1-NR103
Session Type: Non-RSNA CME Symposiums
9:30 AM - 10:30 AM CST

**Enhancing Imaging Precision: Subtle Medical's AI-Driven Breakthroughs in Acceleration and the Next Evolution in Workflow Optimization - Subtle Medical Inc** | IM1-AI101
Session Type: AI Theater Presentations (non-CME)
10:30 AM - 10:50 AM CST

**Revolutionize Imaging Research with a VNA: A New Era of Data Management: Hyland Healthcare** | IM1-IT101
Session Type: Innovation Theater Presentations (non-CME)
10:30 AM - 10:50 AM CST

**AI Theater: AIRS Medical (Monday)** | IM2-AI102
Session Type: AI Theater Presentations (non-CME)
11:00 AM - 11:20 AM CST

**What Does Acceleration in AI Development Look Like? Bayer** | IM2-IT102
Session Type: Innovation Theater Presentations (non-CME)
11:00 AM - 11:20 AM CST

**AI Theater: See-Mode Technologies** | IM3-AI103
Session Type: AI Theater Presentations (non-CME)
11:30 AM - 11:50 AM CST

**From Detection to Action: AI-Driven Real-Time Insights to Accelerate Patient Management: Cerebriu** | IM3-IT103
Session Type: Innovation Theater Presentations (non-CME)
11:30 AM - 11:50 AM CST

**Achieving Seamless Image Exchange and Intelligent Patient Engagement: Insights from a Panel of Experts: PocketHealth (RSVP Required)** | IM1-LL103
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**AI in the real world of radiology: How industry leaders are challenging assumptions and embracing opportunities around innovation through AI: Intelerad (RSVP Required)** | IM1-LL104
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**How to get AI/ML SaMD FDA Cleared: Innolitics, LLC** | IM4-AI104
Session Type: AI Theater Presentations (non-CME)
12:00 PM - 12:20 PM CST

**Advancing Medical Imaging - Samsung Innovations in Interventional CT and Breast Ultrasound: Samsung (RSVP Required)** | IM1-LL102
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**Safeguarding Wealth: Lawsuit Prevention & Tax Strategies: Legally Mine (RSVP Required)** | IM1-LL101
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**Solving for Today, Innovating for Tomorrow: Bayer** | IM1-CE101
Session Type: Innovation Theater Presentations (non-CME)
12:00 PM - 12:45 PM CST

**The Benefits of the Cloud in Medical Imaging: A Clinical Perspective: Merge by Merative** | IM4-VP104
Session Type: Virtual Industry Presentations (non-CME)
12:00 PM - 1:00 PM CST

**Ushering Performance Measures to Radiology: How the New ExRad eCQMs Will Impact Your Radiology Practice: Alara Imaging** | IM5-AI105
Session Type: AI Theater Presentations (non-CME)
12:30 PM - 12:50 PM CST

**AI Theater: MEDICAL IP** | IM6-AI106
Session Type: AI Theater Presentations (non-CME)
1:00 PM - 1:20 PM CST

**Filling Your Candidate Pipeline: 7 Habits of Highly Effective Practices: Medality, formerly MRI Online** | IM6-IT106
Session Type: Innovation Theater Presentations (non-CME)
1:00 PM - 1:20 PM CST

**Brain New Life, Together – AI-Powered Neurovascular and Neurodegenerative Imaging Innovation: Heuron** | IM7-AI107
Session Type: AI Theater Presentations (non-CME)
1:30 PM - 1:50 PM CST

**Improving Front Office Efficiencies using Integrated RIS/PACS Cloud Technology and Performance-Enhancing Apps: RamSoft, Inc** | IM7-IT107
Session Type: Innovation Theater Presentations (non-CME)
1:30 PM - 1:50 PM CST

**Bayer's AI Innovation Platform - a Catalyst for healthcare transformation with AI: Bayer** | IM8-AI108
Session Type: AI Theater Presentations (non-CME)
2:00 PM - 2:20 PM CST

**Overcoming Limitations: DeepSight Technology is revolutionizing medical ultrasound with groundbreaking imaging and interventional solutions: DeepSight** | IM8-IT108
Session Type: Innovation Theater Presentations (non-CME)
2:00 PM - 2:20 PM CST

**A Clinical View On Cybersecurity: Innovation Is Key: Merge by Merative** | IM9-IT109
Session Type: Innovation Theater Presentations (non-CME)
2:30 PM - 2:50 PM CST

**PACS as a gateway to AI - how leading PACS providers are partnering with CARPL to AI-enable their users: CARPL.ai** | IM9-AI109
Session Type: AI Theater Presentations (non-CME)
2:30 PM - 2:50 PM CST

**Alzheimer's Disease: Advances in Detection, Treatment, and Therapy Monitoring: Siemens Healthineers** | IM2-CS104
Session Type: Corporate Symposiums (non-CME)
3:00 PM - 4:00 PM CST

**Bridging the Gap from Development to Deployment with Bayer and Google Cloud** | IM2-CS105
Session Type: Corporate Symposiums (non-CME)
3:00 PM - 4:00 PM CST

**Extending the Frontier of AI+Radiology: Careverse, a trademark of SHUKUN Technology** | IM10-IT110
Session Type: Innovation Theater Presentations (non-CME)
3:00 PM - 3:20 PM CST

**HOPPR - Medical Grade Large Vision Models in Radiology and Healthcare: HOPPR** | IM10-AI110
Session Type: AI Theater Presentations (non-CME)
3:00 PM - 3:20 PM CST

**Looking Ahead to 2025 - Policies and Regulations Impacting Radiology: Zotec Partners** | IM11-IT111
Session Type: Innovation Theater Presentations (non-CME)
3:30 PM - 3:50 PM CST

**The data problem for medical imaging AI development – how can we solve it? Segmed** | IM11-AI111
Session Type: AI Theater Presentations (non-CME)
3:30 PM - 3:50 PM CST

**RSNA Lumbar Spine Degenerative Classification AI Challenge Recognition Event: presented by RSNA** | IM12-AI112
Session Type: AI Theater Presentations (non-CME)
4:00 PM - 5:00 PM CST

## Tuesday, Dec. 3

**Precision patient journey: The impact of data and AI: Philips** | IT1-CS102
Session Type: Corporate Symposiums (non-CME)
9:30 AM - 10:30 AM CST

**AI Theater: Bayer: Blackford + Calantic (Tuesday)** | IT1-AI101
Session Type: AI Theater Presentations (non-CME)
10:30 AM - 10:50 AM CST

**Quantitative MRI in an Era of Breakthrough Treatments for Metabolic Liver Disease: Resoundant Inc** | IT1-IT101
Session Type: Innovation Theater Presentations (non-CME)
10:30 AM - 10:50 AM CST

**Innovating Bone Health with AI: Opportunistic Osteoporosis Screening with Chest X-ray and Beyond: Promedius** | IT2-AI102
Session Type: AI Theater Presentations (non-CME)
11:00 AM - 11:20 AM CST

**Leveraging the Vista CMR CoPilot software to optimize CMR acquisition to grow your CMR program-early promise for the Cleveland Clinic and 2-year clinical results of Harvard, Brigham and Women's Hospital: Vista.ai** | IT2-IT102
Session Type: Innovation Theater Presentations (non-CME)
11:00 AM - 11:20 AM CST

**A new pocket ultrasound solution from Supersonic Imagine: SuperSonic Imagine** | IT3-IT103
Session Type: Innovation Theater Presentations (non-CME)
11:30 AM - 11:50 AM CST

**EAMC Follow Up Case Study: The AI Force Multiplier Turning Limited Resources Into Unlimited Potential: Inflo Health** | IT3-AI103
Session Type: AI Theater Presentations (non-CME)
11:30 AM - 11:50 AM CST

**Decisions at the Scanner for Brain MRI Using AI: Cerebriu** | IT4-AI104
Session Type: AI Theater Presentations (non-CME)
12:00 PM - 12:20 PM CST

**Enhancing Breast Cancer Detection: The Role of AI in Mammography: Hologic, Inc.** | IT1-LL103
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**It takes a Team; Complex embolization procedures performed in the IR lab. Perspective from the physician and technologist view: Shimadzu Medical Systems (RSVP Required)** | IT1-LL104
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**Revolutionize Cardiothoracic Imaging with Non-contrast CT-based Ventilation and Perfusion: Philips and 4DMedical** | IT1-CE101
Session Type: Innovation Theater Presentations (non-CME)
12:00 PM - 12:45 PM CST

**Subtle in Name. Game-changing by Nature. Discover Unmatched Image Quality and Speed with the Grand Unveiling of Subtle-ELITE, Subtle Medical's Most Powerful Innovation Yet: Subtle Medical Inc** | IT1-LL101
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**Transforming Radiology: Emory Healthcare's Journey with AI and Cloud Technology - Microsoft (RSVP Required)** | IT1-LL102
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**New horizons in the fight against lung cancer: from design to regulatory filling, discover how eyonis™ LCS, Median Technologies' AI-based SaMD, can catalyze lung cancer screening implementation: Median Technologies**| IT5-AI105
Session Type: AI Theater Presentations (non-CME)
12:30 PM - 12:50 PM CST

**rScriptor - Optimizing Radiology Reporting Workflow Through Software Innovation: Scriptor Software** | IT6-IT106
Session Type: Innovation Theater Presentations (non-CME)
1:00 PM - 1:20 PM CST

**The Thin White Line: Which Calcifications Matter? Advances in AI Breast Cancer Detection Offer Insight into The Value Of "False-Positives": iCAD, Inc.** | IT6-AI106
Session Type: AI Theater Presentations (non-CME)
1:00 PM - 1:20 PM CST

**Why AI Has a Data Problem: Encord** | IT7-AI107
Session Type: AI Theater Presentations (non-CME)
1:30 PM - 1:50 PM CST

**The Future of Image Exchange: Advancing Patient and Provider Engagement: PocketHealth** | IT7-IT107
Session Type: Innovation Theater Presentations (non-CME)
1:30 PM - 1:50 PM CST

**AI-aided Contrast Augmentation of Suboptimal chest CT and CTPA and abdominal-Pelvis CT examinations: ClariPi Inc** | IT8-AI108
Session Type: AI Theater Presentations (non-CME)
2:00 PM - 2:20 PM CST

**Networked Radiology, Not Overworked: AGFA HealthCare** | IT8-IT108
Session Type: Innovation Theater Presentations (non-CME)
2:00 PM - 2:20 PM CST

**Enhancing Operational Efficiency with AI/ML: HEALTHLEVEL** | IT9-AI109
Session Type: AI Theater Presentations (non-CME)
2:30 PM - 2:50 PM CST

**Revolutionizing Brain Imaging: The Evolution of Ultra-Low-Field MRI: Hyperfine, Inc.** | IT9-IT109
Session Type: Innovation Theater Presentations (non-CME)
2:30 PM - 2:50 PM CST

**Accelerating Medical Breakthroughs with an End-to-End Imaging Data and Analysis Platform: Flywheel** | IT10-IT110
Session Type: Innovation Theater Presentations (non-CME)
3:00 PM - 3:20 PM CST

**AI Theater: Remedy Logic** | IT10-AI110
Session Type: AI Theater Presentations (non-CME)
3:00 PM - 3:20 PM CST

**Leading the future of photon-counting CT imaging with profound clinical impact: Siemens Healthineers** | IT2-CS105
Session Type: Corporate Symposiums (non-CME)
3:00 PM - 4:00 PM CST

**Leveraging AI technology: A new era of radiology reporting: Solventum, formerly 3M Health Information Systems** | IT11-IT111
Session Type: Innovation Theater Presentations (non-CME)
3:30 PM - 3:50 PM CST

**Confident with ARIA? Elevate Your Real-World Experience with Neurophet's Ready-to-Use ARIA Software: NEUROPHET** | IT11-AI111
Session Type: AI Theater Presentations (non-CME)
3:30 PM - 3:50 PM CST

## Wednesday, Dec. 4

**End-to-End AI-powered Workflow Automation: Canon Medical Systems USA, Inc.** | IW1-AI101
Session Type: AI Theater Presentations (non-CME)
10:30 AM - 10:50 AM CST

**The standard of the future in medical imaging: enabling the shift from sick care to health care: Neo Q Quality in Imaging GmbH** | IW1-IT101
Session Type: Innovation Theater Presentations (non-CME)
10:30 AM - 10:50 AM CST

**AI Beyond Medical Imaging: More Data, More Insight: Microsoft** | IW2-IT102
Session Type: Innovation Theater Presentations (non-CME)
11:00 AM - 11:20 AM CST

**Underutilization of Cardiac MRI: How Vista CMR CoPilot can resolve a critical gap in patient care in tertiary care centers and the community: Vista.ai** | IW2-AI102
Session Type: AI Theater Presentations (non-CME)
11:00 AM - 11:20 AM CST

**Advancing Medical Innovation with Printing PEEK at the Point of Care: Our Experience: 3D Systems** | IW3-IT103
Session Type: Innovation Theater Presentations (non-CME)
11:30 AM - 11:50 AM CST

**The power of Chest X-ray AI and early lung cancer detection: Prelim results of RADICAL study: Qure.ai Technologies Inc**. | IW3-AI103
Session Type: AI Theater Presentations (non-CME)
11:30 AM - 11:50 AM CST

**Advancements in Breast Cancer Detection with Contrast-Enhanced Mammography: Co-Sponsored by Hologic and Bayer** | IW1-LL103
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**Advancements in Imaging: Canon Medical Systems USA, Inc. (RSVP Required)** | IW1-LL104
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**Highly Sensitive Novel Solution for Detecting Brain Bleedings on Head CT scans: Planmed Inc.** | IW4-AI104
Session Type: AI Theater Presentations (non-CME)
12:00 PM - 12:20 PM CST

**Power of Cloud-Based Enterprise Imaging: A Transformative Journey for Radiology Workflows: AWS** | IW1-LL101
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**Unlocking the Full Potential of Radiology with AI-Driven Enterprise Imaging: AGFA HealthCare (RSVP Required)** | IW1-LL102
Session Type: Lunch & Learns (non-CME)
12:00 PM - 1:00 PM CST

**AI Theater: FDA-Grade AI: Total Product Lifecycle Control with a PCCP: Ketryx** | IS2-AI102
Session Type: AI Theater Presentations (non-CME)
12:30 PM - 12:50 PM CST

**Doing Good with Data - Accelerating Medical AI Development and Eliminating Bias: Gradient Health** | IW6-AI106
Session Type: AI Theater Presentations (non-CME)
1:00 PM - 1:20 PM CST

**MIDRC - The Medical Imaging and Data Resource Center: presented by RSNA** | IW12-IT112
Session Type: Innovation Theater Presentations (non-CME)
4:00 PM - 5:00 PM CST

**Radiology AI Fireside Chat: presented by RSNA** | IW12-AI112
Session Type: AI Theater Presentations (non-CME)
4:00 PM - 5:00 PM CST


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