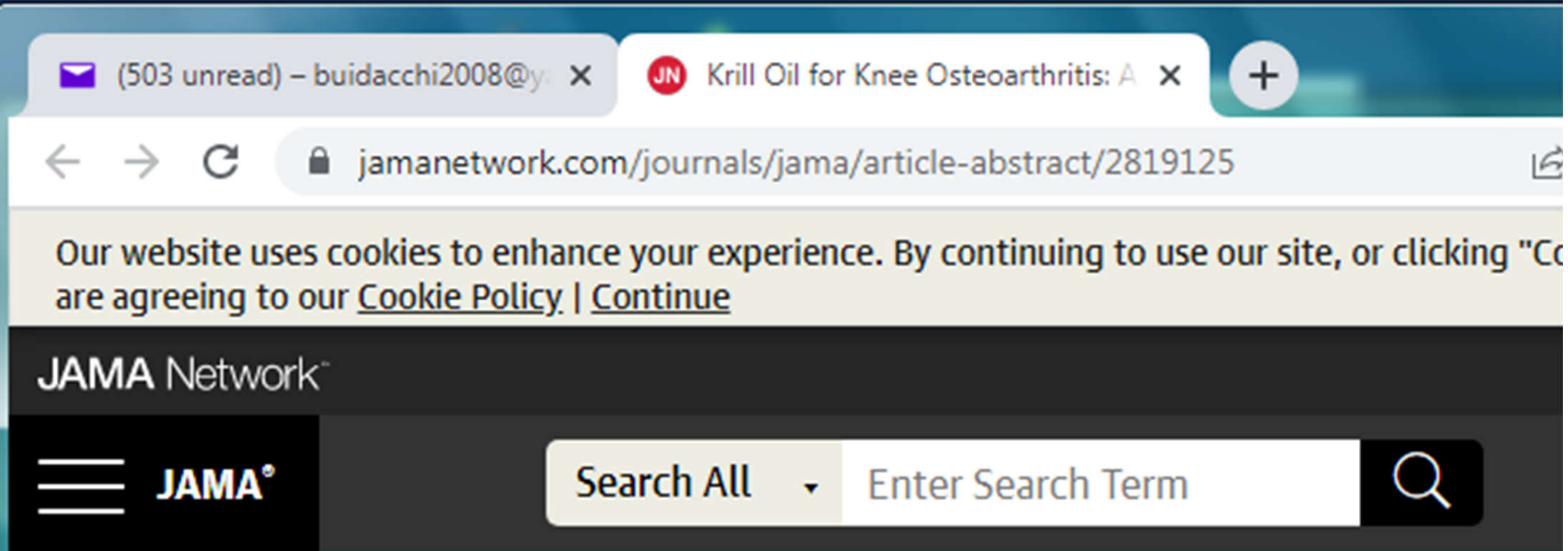

May 22, 2024

Krill Oil for Knee Osteoarthritis

A Randomized Clinical Trial

Laura L. Laslett, PhD[1]; Lieke E. J. M. Scheepers, PhD[1]; Benny Antony, PhD[1]; et al

Author Affiliations

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completed the trial. Krill oil did not improve knee pain compared with placebo (mean change in VAS score, −19.9 [krill oil] vs −20.2 [placebo]; between-group mean difference, −0.3; 95% CI, −6.9 to 6.4) over 24 weeks. One or more adverse events was reported by 51% in the krill oil group (67/130) and by 54% in the placebo group (71/132). The most common adverse events were musculoskeletal and connective tissue disorders, which occurred 32 times in the krill oil group and 42 times in the placebo group, including knee pain (n = 10 with krill oil; n = 9 with placebo), lower extremity pain (n = 1 with krill oil; n = 5 with placebo), and hip pain (n = 3 with krill oil; n = 2 with placebo).

Conclusions and Relevance Among people with knee osteoarthritis who have significant knee pain and effusion-synovitis on magnetic resonance imaging, 2 g/d of daily krill oil supplementation did not improve knee pain over 24 weeks compared with placebo. These findings do not support krill oil for treating knee pain in this population.

How Accurate Is Pre-Operative Risk Assessment?

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proof

One of the commonest consultations that I see in the outpatient and in-patient environment involves pre-operative risk assessment requested by general surgery or one of the surgical subspecialities, for example, orthopedics. There exist many instruments for estimating patient risks involved with specific operations. Each of these clinical tools relies on clinical information easily obtained from the patient or the medical record. The commonest variables employed include age, renal function, presence of diabetes mellitus, frail condition, current smoking, and the results of a variety of blood tests such as high sensitivity troponin, C-reactive protein, and D-dimer. One of the most frequently used instruments is the Surgical Risk Score (SRS) which assigns a numerical risk value to various planned surgical interventions.[1] When calculated, the SRS results in a preoperative risk assessment number ranging from 1 (very low risk) to 5 (very high risk). The SRS tool is the commonest surgical risk tool employed in daily clinical practice. However, there are many other risk scores.

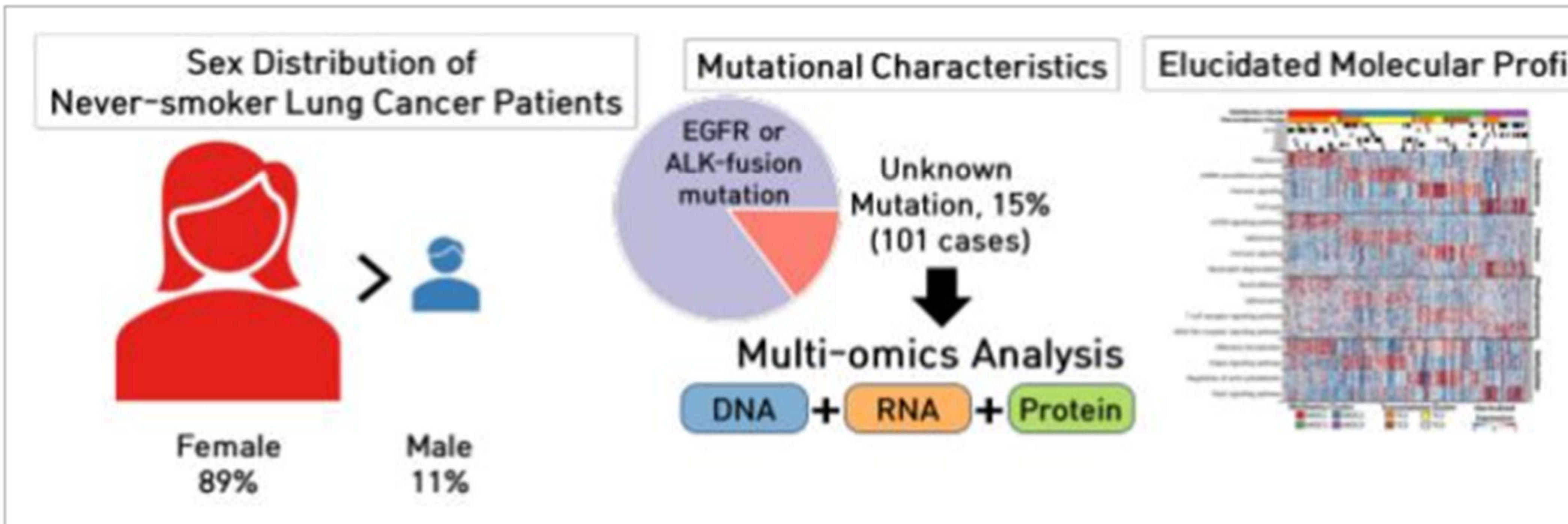
Journal

NEWS RELEASE 3-JUN-2024

New pathways for treating never-smoker lung cancer revealed

Precision medicine characterization through integration of genomic, transcriptomic, proteomic, and clinical data

Peer-Reviewed Publication


Sex Distribution of
Never-smoker Lung Cancer Patients
Female
89%
Male
11%
Mutational Characteristics
EGFR or
ALK-fusion
mutation
Unknown
Mutation, 15%
(101 cases)
Multi-omics Analysis
DNA
RNA
Protein
Elucidated Molecular Profil

of over 9,000 proteins and 5,000 phosphorylated proteins per sample using only 100 μg of protein, which is 10% of the amount required for conventional protein analysis, using isotopic labeling techniques.

Analysis of genetic mutations and cellular signaling pathways revealed that driver mutations of genes known to be associated with cancer, such as STK11 and ERBB2, were observed in the tissues of never-smoking lung cancer patients. Additionally, while the estrogen signaling pathway was found to be overexpressed, there were no significant changes in estrogen hormone receptors. Based on this, saracatinib, a sub estrogen signaling transduction protein inhibitor, showed statistically significant ($p<0.01$) cell death effects when applied to cells with mutations in STK11 and ERBB2 compared to the control group without such mutations.

Building on this, the research team is developing a molecular diagnostic technique for discriminating patients with specific expression of estrogen signaling pathways among never-smoking lung cancer patients. Additionally, they plan to conduct preclinical trials of saracatinib's therapeutic effects on never-smoking lung cancer animal models in collaboration with the National Cancer Center.

Dr. Lee Cheolju of KIST stated, "This successful case of discovering new therapeutic targets for refractory cancer through multi-omics analysis is based on purely domestic research and the collaborative efforts of hospitals and research institutions, which holds significant meaning. Building on this experience, we will lead the expansion of multi-omics research on human diseases."

The primary cause of lung cancer is smoking. However, the incidence of lung cancer among never-smokers has been steadily increasing, especially among women. While approximately 80% of never-smoking lung cancer patients are prescribed targeted therapies that focus on mutations in proteins such as EGFR and ALK, the remaining patients often receive cytotoxic chemotherapy with high side effects and relatively low response rates, highlighting the urgent need for targeted therapies.

Dr. Lee Cheolju's team at the Chemical Life Convergence Research Center at the Korea Institute of Science and Technology (KIST), along with Dr. Kim Seon-Young's team at the Korea Research Institute of Bioscience and Biotechnology and Dr. Han Ji-Youn's team at the National Cancer Center, have elucidated the overexpression of estrogen signaling pathways in specific Korean never-smoking lung cancer cases using multi-omics analysis and proposed the anti-cancer drug saracatinib as a targeted

Can MRI replace PSA test in prostate cancer screening?

Kate Madden Yee

Jun 3, 2024

MRI isn't yet ready to replace prostate-specific antigen (PSA) testing as a first-line screening exam for prostate cancer, researchers have reported.

A team led by Roman Gulati of Fred Hutchinson Cancer Center in Seattle found that "despite the potential attractiveness of first-line imaging-based [prostate cancer] screening, [a] microsimulation model showed that first-line [biparametric MRI]-based screening substantially increased rates of false-positive test results, prostate biopsy, and overdiagnosis without proportionately substantial reductions in prostate cancer mortality compared with first-line PSA testing with reflex [multiparametric MRI]." The study findings were published June 3 in *Annals of*

Comparison of first-line PSA testing to first-line bpMRI for prostate cancer screening in 1,000 men

Measure	First-line PSA testing	First-line bpMRI
Deaths prevented	3	2
Additional life years	30	10
Number of biopsies	1,506	4,174
Number of overdiagnoses	38	124

"[This] cost-effectiveness analysis of a bpMRI-first prostate cancer screening approach highlights the need for a more robust understanding of the true comparative diagnostic accuracy of bpMRI compared with PSA testing followed by standard template biopsy, the financial toxicity associated with modern prostate cancer screening practices, and how to select the best patients for prostate biopsy through incorporation of biomarkers, imaging, and patient risk factors," they wrote. "While we await such evidence, rigorous cost-effectiveness analyses can and should be considered in guideline recommendations to encourage physicians to pursue the highest-value management strategy for their patients."

Annals of Internal Medicine®

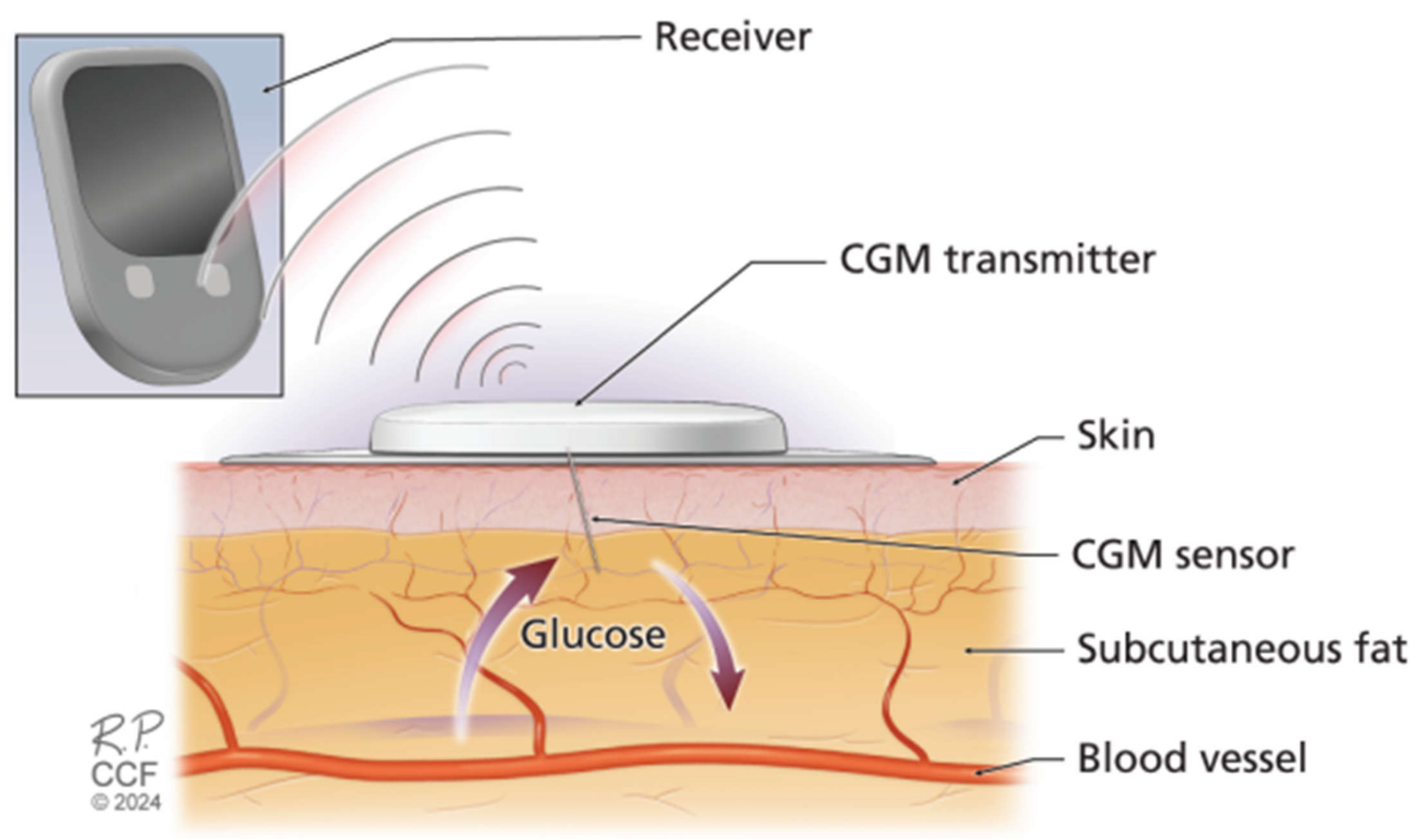
Original Research | 4 June 2024

Lifetime Health and Economic Outcomes of Biparametric Magnetic Resonance Imaging as First-Line Screening for Prostate Cancer: A Decision Model Analysis

Authors: Roman Gulati, MS, Boshen Jiao, PhD, Ra'ad Al-Faouri, MD, MMSc, Vidit Sharma, MD, Sumedh Kaul, MS, Aaron Fleishman, MPH, Kevin Wymer, MD, Stephen A. Boorjian, MD, Aria F. Olumi, MD, Ruth Etzioni, PhD, and Boris Gershman, MD | AUTHOR, ARTICLE, & DISCLOSURE INFORMATION

Publication: Annals of Internal Medicine • https://doi.org/10.7326/M23-1504

Diabetes technology: A primer for clinicians


Receiver
CGM transmitter
Skin
CGM sensor
Glucose
Subcutaneous fat
Blood vessel
R.P.
CCF
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ABSTRACT

Diabetes technology is evolving rapidly and is changing the way both patients and clinicians approach the management of diabetes. With more devices gaining US Food and Drug Administration approval and insurance coverage expanding, these new technologies are being widely adopted by people living with diabetes. We provide a summary of the commonly available devices in the market today that clinicians will likely encounter. This includes continuous glucose monitors (CGMs); connected insulin pens, caps, and buttons; and insulin pumps. Clinicians' awareness of and familiarity with this technology will enhance its accessibility for patients with diabetes.

enhance its accessibility for patients with diabetes.

KEY POINTS

CGMs measure interstitial glucose and transmit data wirelessly to a receiver. Evidence supports their use in patients on insulin therapy or who are at a high risk of hypoglycemia.

Connected insulin pens, caps, and buttons act as bridges between traditional insulin pens and insulin pumps. The technology allows patients to calculate how much insulin to take, accounting for carbohydrate intake, glucose level, and, in some models, previous insulin dose.

Insulin pumps deliver rapid-acting insulin continuously via the subcutaneous route either independently (open loop) or in association with CGMs (automated insulin delivery).

THE END