



Nutrition Research Review

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Emergence of Imaging Technology Beyond the Clinical Setting: Utilization of Mobile Health Tools for At-Home Testing

Publication: Nutrition in Clinical Practice

Publish Date: April 2024

Authors: Starkoff B, Nickerson B

SUMMARY

This narrative review examines body composition assessment, highlighting imaging techniques (ultrasound and DXA) and new technologies (AI and mobile health apps). Despite the effectiveness of ultrasound and DXA, cost and accessibility limit their use. AI-enhanced image analysis could improve tissue differentiation, and mobile health apps offer real-time metabolic monitoring and personalized feedback. These innovations could personalize care and optimize clinical outcomes, but their validity, reliability, and inclusivity must be ensured for broad application in personalized healthcare

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Improving Anthropometric Measurements in Hospitalized Children: A Quality-Improvement Project

Publication: Nutrition in Clinical Practice

Publish Date: June 2023

Authors: Persaud S, Hron BM, Rudie C, Mantell P, Kahlon PS, Ariagno K, Ozonoff A, Trivedi S, Yugar C, Mehta NM, Raymond M, Duggan CP, Huh SY

SUMMARY

This study highlights the importance of accurate anthropometric measurements for patient care. The objective of this study was to increase documentation rates of anthropometrics (measured weight, length/height, and BMI) from <50% to 80% within 24 hours of hospital admission. Multidisciplinary champion teams addressed barriers to documentation from May 2016 to June 2018. Anthropometric documentation was assessed monthly using statistical process control methodology.

Results showed significant improvements in documentation rates of BMI and measured weight and length/height. Goal rate (80%) was achieved within 26 months for all anthropometrics in the surgical unit and for weight in the cardiac unit. This approach translated into increased rates of identification of patients at risk for malnutrition (undernutrition).

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Early Goal Enteral Nutrition Associated with Decreased In-Hospital Death in Mechanically Ventilated Critically Ill Adults: A Retrospective Cohort Study

Publication: BMJ Open Respiratory Research

Publish Date: May 2024

Authors: Powierza C, Doyle M, Wasden K, Intihar T, Korwin A, Honiden S, Knauert M

SUMMARY

This retrospective cohort study aimed to evaluate the impact of early enteral nutrition (EN) on clinical outcomes in critically ill, mechanically ventilated adults. Despite

recommendations for early EN initiation, the optimal timing and dosage still need to be better understood. The research assessed whether achieving 70% of the recommended EN within two days of intubation influenced in-hospital mortality, successful extubation, and discharge alive. Results indicated that early goal EN was associated with a lower incidence of in-hospital death and a higher incidence of successful extubation and discharge alive.

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Development of the Pediatric Integrated Nutrition Pathway for Acute Care (P-INPAC) Using a Modified Delphi Technique

Publication: Applied Physiology, Nutrition and Metabolism

Publish Date: May 2024

Authors: Brunet-Wood K, Tul-Noor Z, Bandsma RHJ, Carter L, Fleming-Carroll B, Gramlich L, Hutchison K, Huysentruyt K, Kalnins D, Marchand V, Martinez A, Pai N, Vachon M, Hulst JM

SUMMARY

One in three children have disease related malnutrition (DRM) upon hospital admission and all are at risk of further nutritional deterioration during their stay. However, systematic approaches to detect DRM are lacking. To address this, the Canadian Malnutrition Taskforce's multidisciplinary pediatric working group aimed to develop a pediatric inpatient nutritional care pathway inspired by their work in the adult population. This was based on available evidence, resource feasibility, and expert consensus. The group held four meetings, including an in-person meeting to draft the pathway and three online Delphi consensus meetings to agree on the draft.

The Pediatric Integrated Nutrition Pathway for Acute Care (P-INPAC) was developed through this process. It includes screening within 24 hours of admission, assessment using the Subjective Global Nutritional Assessment (SGNA) within 48 hours of admission, and prevention and treatment of DRM. The treatment is divided into standard, advanced, and specialized nutrition care plans.

The authors suggest research is needed to explore the feasibility of implementing P-INPAC and evaluate its effectiveness when integrated into clinical practice.

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Do Precision and Personalised Nutrition Interventions Improve Risk Factors in Adults with Prediabetes or Metabolic Syndrome? A Systematic Review of Randomised Controlled Trials

Publication: Nutrients

Publish Date: May 2024

Authors: Robertson S, Clarke E, Gómez-Martín M, Cross V, Collins C, Stanford J

SUMMARY

This review synthesized existing literature on the efficacy of personalized or precision nutrition (PPN) interventions, including medical nutrition therapy (MNT), for improving health outcomes in adults with prediabetes or metabolic syndrome. A systematic search of six databases identified seven randomized controlled trials (RCTs) involving 873 participants, examining outcomes like glycaemic control, anthropometry, blood lipids, blood pressure, and dietary intake. The review found consistent and significant improvements in HbA1c, post-prandial glucose, and waist circumference with PPN and MNT interventions, though results for other measures were inconsistent. Longer and more frequent interventions showed greater benefits, particularly for HbA1c and waist circumference. The review highlighted the need for more research with larger sample sizes and standardized PPN definitions, and suggested future studies should explore integrating MNT with contemporary PPN factors such as genetic, epigenetic, metabolomic and metagenomic data.

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