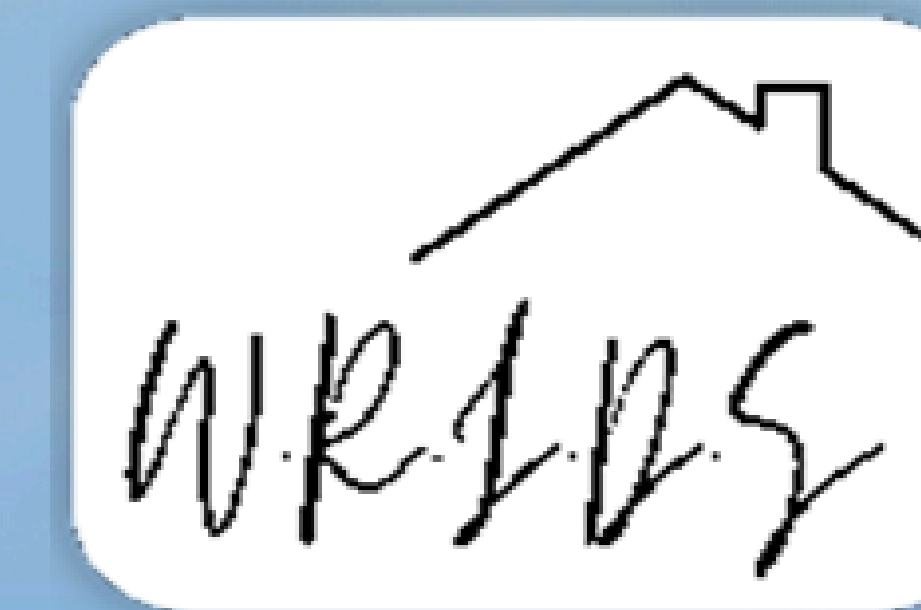




# ALTERNATIVE BONE HEALTH MEASURES: THE ECHOLIGHT PROJECT



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## BACKGROUND

Osteoporosis is widely recognised to impact negatively on healthy ageing, contribute to higher disability and impact negatively on overall quality of life. Recognising and diagnosing osteoporosis can be challenging for people with intellectual disability as DXA is not always compatible to their needs. Burke et al (2023) noted that the IDS-TILDA study identified an increase in doctor's diagnosis over its lifetime however there is a large gap between objectively measured bone health and doctor's diagnosis [19% v 32%] and yet less than a quarter attend for vital DXA screening despite higher risk. To that end alternative portable and accessible methods of bone screening were sourced. The team identified the Echo light REMS (Radiofrequency Echographic Multi-Spectrometry) technology, to measure bone mineral density, which is diagnostic, accessible, and more promising for this cohort.



## AIMS AND OBJECTIVES

This project aimed to comprehensively evaluate the applicability and feasibility of using the Echo light device for bone screening, across diverse demographic and intellectual disability levels as an alternative screening assessment for individuals with an intellectual disability.

## CHALLENGES PRESENTED IN BONE HEALTH MEASUREMENTS

- Diagnosis is often difficult and people with an intellectual disability often find it challenging to participate in conventional DXA screening.
- Behavioural complexities
- Physical and anatomical abnormalities including difficulties in patient positioning.
- Communication challenges
- Environmental challenges such as no hoist.
- Health promotion challenges including the importance of monitoring bone health.



## MAKING REASONABLE ADJUSTMENTS



All project materials have been modified to ensure they are accessible to people with an intellectual disability.



It serves as a diagnostic and monitoring device, devoid of ionizing radiation, portable, and less demanding in terms of patient positioning compared to the conventional DXA scan. This pain-free assessment is completed in under 2 minutes thus the Echo light's swift and non-invasive nature promises to minimise stress to individuals undergoing the assessment.



Portability of machine facilitates easy movement including use of the device in the comfort of the individual's home.

## METHOD AND FINDINGS

Data collection was completed across four service provider sites in Ireland with participation of individuals across all levels of intellectual disability who completed a bone screening assessment using the Echo light device and completion of an evaluation survey post scan. Preliminary results demonstrate successful screenings at initial sites, with positive engagement and minimal implementation barriers.



## CONCLUSIONS AND IMPACT

The European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (ESCEO) and the Food and Drug Administration (FDA) have clinically approved and validated Echo light as a bone health diagnostic device. In October 2024 Ms Anne Power (ANP) presented the findings thus far to the Irish Osteoporosis Society at their annual medical conference who have officially endorsed the Echo light device. Recognising the Echo light as a viable and accessible bone screening device for individuals with intellectual disabilities will ensure timely access to assessments and empower early interventions.

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