



Bone and Joint Literacy in the Australian Curriculum

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A recent mapping of the Australian K-10 curriculum revealed there is scant reference to the concepts underpinning the achievement of the knowledge, understanding and skills relating to bone and joint literacy outcomes in a cohesive and age-appropriate manner. This is not to say that Australian educators do not address various health literacy outcomes - far from it!

However, the curriculum is disjointed from a bone literacy perspective [pardon the pun]. For example, it is common for younger children to hold the scientific misconception that bones are inert and not living tissue. In addition, many older students do not understand that once the skeleton is fully developed, typically around the mid-twenties, it begins to decline in bone mass.

Key bone and joint literacy messages must be offered at various touchpoints to school-aged children, including:

- how specific exercises can strengthen bones,
- how keeping active and eating a healthy diet including Calcium, Vitamin D, and protein,
- avoiding smoking,
- maintaining a healthy weight and limiting alcohol in adulthood

These are excellent ways to slow down the loss of bone mass loss and prevent progression to more serious conditions like osteopenia or osteoporosis.

The foundations for strong bone and joint health commence in childhood and are especially important in adolescence. In designing new bone and joint literacy resources or programs, it is vital to consider contemporary teaching and learning principles. The current Australian Health and Physical Education

K-10 curriculum is informed by a strengths-based approach, allowing educators to focus on what students are doing well to keep themselves healthy and safe. It has moved from a deficit teaching model to a learner-centred approach. Bone and joint literacy teaching approaches should then focus on assisting students in identifying the skills and capacities needed to move towards positive outcomes.

Contemporary teaching and learning approaches should also recognise that students already have varying levels of personal and community resources and take account of contextual factors that may influence their students' decisions and behaviours (ACARA, version 8.4).

Most Australian students today have unprecedented access to various technology devices, including computers, smartphones, and tablets. Ironically, a recent scoping review undertaken by our team regarding digital educational bone and joint health resources applicable for children 8-18 years revealed a distinct lack of engaging, immersive and contemporary online programs. The growing appeal of digital games is increasingly being explored as promising learning tools to promote health education concepts and messages to students. A well-designed bone and joint digital game could provide meaningful active learning and entertainment, where learning occurs through gameplay that engages the learner in challenges adapted to their age-appropriate skills. By engaging in a virtual world, the player could gain experiences and skills that can later shape behavioural patterns that positively influence bone and joint health outcomes. Perhaps this is an avenue worth exploring to help improve the bone and joint health of Australians in the long term.