Biologists warn of the problems of determining age from biological indicators in children

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The thousands of unaccompanied asylum seeking children (UASC) entering Europe to seek escape from war and poverty are in the headlines as the British Government considers the acceptance of 3000 refugee children to the UK. In addition to the loss of their families, many of these children will also have no documentary proof of their identity or age and no-one to support their status as "children" and thus their claim of asylum. In those cases in which the child appears to be mature, scientific evidence is required by the government to support an age of less than 18 years. In these cases an assessment of the biological maturity of the child is made on the assumption of the close relationship between maturity and age. In 2015 these assessments were carried out in 488 of the 2168 applications by UASC; over 20% of all applications.

The lack of precision in determining age from estimates of maturity is highlighted by Noël Cameron, Professor of Human Biology at Loughborough University, in a commentary article in the Annals of Human Biology. Professor Cameron draws attention to the "imperfect association" between maturity and age. He writes that, "The standard method of maturity estimation involves assessing skeletal maturity from the bones of the hand and wrist. However skeletal maturity or "skeletal age" as it is commonly known, has a standard deviation of approximately one year about any specific chronological age meaning that a child's chronological age could be within ±2 years of any skeletal age." If an average skeletal age of 18 "years" is assumed to have been reached by

boys at a chronological age of 18 years, then whilst 50% of young men will exhibit full skeletal maturity at 18 years, 50% will not exhibit full maturity. Thus a decision based on adulthood being defined as the attainment of full skeletal maturity condemns those skeletally advanced 17 year olds to laws governing adults and those skeletally delayed 18 year olds to laws governing children.

Cameron maintains that figures similar to these "can be found in most countries of the European Union who have been the target for asylum seeking refuges in the last few years. Almost all use skeletal maturity as the primary method to determine chronological age." In his opinion it is indefensible to ignore the known imperfect association between maturity and age in order to decide who will, or will not, be granted the opportunities afforded by asylum in the UK.

More information: Noël Cameron. The European refugee crisis and biological age – is it right to use skeletal maturity as an estimate of chronological age?, *Annals of Human Biology* (2016). DOI: 10.3109/03014460.2016.1145738

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