

Age estimation of unaccompanied minors in the Nordic countries

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ABSTRACT

Introduction: Due to wars and other conflicts around the world, the numbers of asylum seekers in the Nordic countries in recent years have risen. In 2015, EU countries received 88,700 applications from unaccompanied minors and of all the applicant minors, 23% were unaccompanied, more males than females. Human rights have been guarded for children through international regulations where the most important one is the UN Declaration of the Right of the Child. The legal system seeks assistance from forensic odontologists in age estimation for this age group. Tooth formation is less disturbed by various diseases, nutritional or hormonal factors than other biological growing factors and is therefore more accurate for age estimation than other measurable growth criteria in the body.

Material and methods: Method for age estimations in the Nordic countries were collected by contacting forensic odontologists responsible for dental age estimation in each country. Questions were submitted for them asking what methods are used and if the conclusion is presented with mean and standard deviation. Is skeletal age as hand and wrist radiography used and who is responsible for the analysis?

Results: Dental age estimations are based on one to three of the following methods: Haavikko (1970), Liversidge (2008), Mincer et al. (1993), Köhler et al. (1994). Nyström et al (2007), Kataja et al. (1989), Chaillet et al. (2005) and Willems et al. (2001). In Finland QMUL atlas is also used. In all countries except Iceland, hand and wrist radiography based on Greulich and Pyle atlas (1959) is used and in Finland forensic odontologists perform the analysis. All age estimations are performed in public institutions except in Sweden where a private company is responsible for the analysis. In Sweden an Excel program producing pooled probabilities of tooth and hand examination in graphics are used combining wrist age and third molars in forensic age estimation to calculate the joint age estimate and its error rate in age diagnostics. All countries except Norway present the conclusion with mean and standard deviation.

Conclusion: Although methods of age estimation in the Nordic countries differs, they are based on scientific evidences, methods recognized by the international scientific community.