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SESSION IV: HOT TOPICS

OP10

METHOD FOR EVALUATION OF PORTION SIZES BASED ON 3D MEASUREMENT OF HANDS

M Sculati¹, H Giberti², M Tarabini³

¹Private Medical Practitioner, Via F Galmozzi 12, Bergamo,
²Department of Industrial and Information Engineering,
Università degli studi di Pavia, ³Department of Mechanical
Engineering, Politecnico di Milano

For the measuring of food portion sizes for nutritional education or diet prescription, grams or cups are generally used. Such units of measure are accurate, but in the long-term people tend not to use these systematically. Portion size measuring aids have been developed mainly for dietary recall data collection, however, few tools have been developed to help people in the recognition of an adequate food portioning without the help of a mechanical device. The comparison of a food portion with the size of the hand, palm, fist or finger have been proposed in the course of the last decades, but the size of the anthropometric measurements of the hand can vary greatly from person to person. As an example, the volume of an adult fist can vary by up to 400%. We developed a system based on the acquisition of a 3D model of a hand with time-of-flight cameras such as the Microsoft Kinect. Geometrical parameters of the hand, such as the fist volume, hand surface or length, are computed using 3D image processing techniques. A dozen of those parameters have been selected and used in a specific software (Handy Diet), which is able to calculate the proportion of a specific food with personal anthropometric parameters; for example the proportion of the individual fist volume with a similar volume of cooked rice. The comparison of the individual hand with the food portion could be a useful tool for a friendly portion size assessment, particularly handy with pediatric patients.

OP11