Medical Imaging Method and System (Yissum)
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Categories	Medical Imaging, Oral Medicine, Quantification of lesion color change
Patent	US 2008/0260218 A1

Need:

In current practice of dermal analysis and of oral and dental lesion analysis, the physician typically observes the suspected area with the naked eye and based on parameters of size, colour and other aspects of the visual appearance, decides whether the lesion warrants further diagnostic testing or treatment. The examination is therefore highly subjective, and is dependent upon his/her powers of observation and experience. Photographic images are influenced by ambient lighting or different camera and flash affecting the appearance of the digital image.

Even after normalization of the colours of digitized images, the challenge remains to determine

whether the colours have been affected over time. This is important for instance, in analysis and

diagnosis of clinical oral images, where lesions in which the colour becomes more intensely red over time can signify malignancy, infection or inflammation (and less intensity implies healing or reaction to treatment). Erythema changes can help evaluating any process of inflammation or infection. The need exists for an objective and quantitative method of analyzing the colour and the size changes occurring in a lesion over time or compared to normal tissue.

Innovation:

The invention allows the user to determine the extent and therefore the medical significance of colour and size changes that are present in a tissue or organ of the human body by quantification of the intensity of the colours. The technology provides a method for computerized analysis of colour and size

a) Placing a reference label having a plurality of reference colours in the vicinity of a tissue or

organ of the human body;

b) Capturing a colour image including the tissue or organ and the reference label, the image is a

digital image or is converted into a digital image;

c) Performing colour and size calibration of the image using the LAB colour system;

d) Selecting the borders of an area of interest within the image;

e) Calculating the intensity and distribution of colour within the area of interest using at least

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one channel of the LAB system, to give at least one colour information attribute.

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