Devinder Preet Singh, Oral Health Dent Manag 2016, 15:4(Suppl)
http://dx.doi.org/10.4172/2247-2452.C1.028

9th International Conference on
Dentistry and Dental Implants
May 09-10, 2016 New Orleans, USA

Servosystem theory of craniofacial growth

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Petrovic employed terminology of cybernetics and control theory to describe craniofacial growth mechanisms and method of operation of functional and orthopedic appliances. The theory demonstrates a qualitative and quantitative relationship between observationally and experimentally collected findings. The Cybernetic approach system operates through signals that transmit information. The signal may be of physical, chemical or electromagnetic nature. Any cybernetic system, when provided an input (or stimulus) it processes such an input and produces an output. The output is related to the input by a transfer function. Physiologic system can be of two types: Open loop: The output does not affect the input and closed loop in which a specific relation is maintained between the input and output. Closed loops are characterized by a feedback loop and a comparator. The input is fed into a comparator which analyses the input and judges the degree to which the transfer function needs to be carried out to obtain a certain output. The output is fed back to the comparator (by a feedback loop) and is analyzed as to its adequacy. If it is found to be inadequate, the transfer function is carried out once again. The feedback loop can have a positive or enhancing effect or a negative or attenuating effect. Servo-system is a type of closed loop in which the main input is constantly changing with time, and the output is constantly adjusted in accordance with the input. The various components of a Servo-system include: Command - Reference Input Comparator (Peripheral)-Central Comparator-the actuator- the coupling system and the controlled system.

Biography

Devinder Preet Singh has completed his BDS from Baba Farid University of Health Sciences, Faridkot, Punjab and Postdoctoral studies in Orthodontics from Kurukshetra University, Haryana, India. He is working as Senior Lecturer in the Dept. of Orthodontics & Dentofacial Orthopedics at Dr. Harvansh Singh Judge Institute of Dental Sciences, Panjab University, Chandigarh, India since November 2007. He has published more than 10 papers in both National and International reputed journals of his specialty. He is a Fellow Member of many reputed national and international orthodontic bodies such as WFO, AAO, EOS, ADA, IOS and IDA.

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