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| **Name:** |
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| 3B-1 |
| **Pathology Question:** |
| What causes dentinal hypersensitivity? |
| **Report:** |
| I will start off by discussing what dentinal hypersensitivity is. Dentinal hypersensitivity is a sharp pain that is usually short in duration. This pain comes and goes with the presence of different stimuli such as hot, cold, sweet, tactile, or electrical. The reason for this pain is exposed dentin. Dentin becomes exposed when there is a loss of cementum/enamel and there are a wide variety of factors that cause this. Some of these factors would be: acidic food/beverages, poor oral hygiene, aggressive brushing techniques, recession, etc. Now that I discussed what dentinal hypersensitivity is and what can cause it, I will discuss the 3 different theories of dentinal hypersensitivity. Those theories are: The direct innervation theory, the transduction theory, and the hydrodynamic hypothesis. The direct innervation theory believes that the nerves from the pulp extend to the dentinoenamel junction, however there have been studies that show the nerves do not extend this far. The transduction theory states that the odontoblastic process acts as a receptor. It is believed that these processes will transmit the pain from in the dentin to the nerve endings in the peripheral pulp. The final theory is the hydrodynamic hypothesis, which states that stimuli cause fluid to flow in the deninal tubules creating a disturbance and this leads to activation of nociceptors in the inner dentin and peripheral pulp. Those are the three different theories of what causes dentinal hypersentsitivity to be perceived. I believe the most accepted theory is the hydrodynamic hypothesis. |
| **References:** |
| Dr. Mohamed Ibrahim lecture slides “Pulp and Dentin Development”  Miglani, Sanjay et al. “Dentin hypersensitivity: Recent trends in management.” *Journal of conservative dentistry : JCD* vol. 13,4 (2010): 218-24. doi:10.4103/0972-0707.73385 |