Optical media

Elevated Anion Gap (>16 meq)	Normal Anion Gap (8-16 meq)
Increased Endogenous production: Ketoacidosis (Alcohol, Starvation, DKA) Lactic Acidosis Uremia	Loss of Bicarbonate: Diarrhea Carbonic anhydrase inhibitors Type 2 RTA (proximal) Pancreatic ileostomy Pancreatic, biliary, intestinal fistula Exogenous Administration: ammonium chloride or HCL Decreased Renal Acid Excretion: Type 1(distal) ,4 RTA Renal Failure
Intoxications: Methanol, Ethylene Glycol, Paraldehyde, Salicylates, INH	Miscellaneous: Hyperkalemia Recovery from DKA

Article to be checked

Check of this article is requested.

Optical Media

This article was checked by pedagogue

This article was checked by pedagogue, but later was changed.

What are Optical Media?:

Optical media are media through which electromagnetic waves pass through. Every optical medium has its own refractive index due to its different optical density.

What Happens in an Optical Medium during Transmission?:

As an electromagnetic wave moves through vacuum, it travels at a speed of 3.00 x 10^8 m/s (the speed of light). Once the wave hits particles at the surface of the medium, energy is absorbed and the electrons begin to vibrate. If the energy of the electromagnetic wave does not match the vibrational frequency of the electron, the energy is re-emitted in the form of an electromagnetic wave with the same frequency and speed (speed of light) through the interatomic space of the medium. This process repeats itself when this new wave hits the next particle that comes in its way. This is basically a cycle of absorption and re-emission that continues throughout the medium until the wave reaches the other ‘outer’ surface of the medium. Despite the fact that the speed of the wave between the particles is the same as that of the speed in vacuum, the medium slows down the process in which the energy is transported from one end of the medium to the other. This is due to the time involved in absorption and reemission. Hence the net speed of the electromagnetic wave is less in the medium than in vacuum.

Refraction Index:

Refraction index refers to the degree to which a medium manages to slow down the wave that is transmitted through it; in other words the tendency of particles to absorb energy and maintain it in the form of vibrating electrons, before re-emitting it in the form of an electromagnetic wave. Thus the higher the refraction index of a material, the slower a wave passes through. The refraction index, indicates how much slower the electromagnetic wave passes through the medium with respect to its speed in vacuum (3.00 x 10^8 m/s).

An optically denser medium is one that slows down the incident wave, an optical rarer medium is one that causes the electromagnetic wave to pass through faster than in the medium it moved through before. Moreover, when an electromagnetic wave passes from an optically dense medium to an optically rarer medium, it bends more away from the normal.

As a wave passes from an optically rarer to an optically denser medium the ray bends more towards the normal. (The process in which the ray changes direction is called refraction.)

Sources:

Henderson, Tom. “Optical Density and Light Speed.” Optical Density and Light Speed. N.p., n.d. Web. 08 Dec. 2013

“Laws of Refraction in Different Mediums.” Laws of Refraction in Different Mediums. NCS Pearson, n.d. Web. 08. Dec. 2013. <http://www.tutorvista.com/content/physics-iv/optics/light-refraction.php>.