



KAMARAJ IAS ACADEMY
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AFMS AI-Driven Screening for Diabetic Retinopathy (DR)

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Subject: GS Paper II (Health) & GS Paper III (S&T) **UPSC Relevance:** AI in public health and military medicine.

- **The Problem:** Diabetic Retinopathy is the damage to blood vessels in the retina due to high blood sugar. It is the leading cause of blindness in working-age adults.
- **The AFMS Initiative:** The **Armed Forces Medical Services** launched India's first AI screening for DR.
- **How it Works:** Non-mydratic cameras take pictures of the eye's fundus. An **AI algorithm (Deep Learning)** identifies early signs like *Microaneurysms* or *Hemorrhages* that are invisible to the naked eye.
- **Public Health Value:**
- **Task Shifting:** It allows a technician or nurse to screen patients, leaving the few available Ophthalmologists to focus on surgery/treatment.
- **Scalability:** This AI can be deployed in remote border areas (Leh, Tawang) where specialists cannot visit frequently.
- **Significance:** It marks the transition from "Curative Medicine" to "Preventative AI-led Screening" in the Indian healthcare system.

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