**Ethics in Personalized Medicine (300-word analysis)**

Artificial Intelligence (AI) is transforming personalized medicine by analyzing vast genomic datasets to recommend tailored treatments. However, ethical concerns arise, especially around **bias**. Many AI models are trained on datasets dominated by individuals of European ancestry, often male. This lack of diversity leads to **underrepresentation** of ethnic groups and women, which can result in **inaccurate or harmful treatment recommendations** for these populations.

For example, an AI system trained mostly on data from white patients might misclassify risk levels or suggest ineffective therapies for Black or Asian patients. This not only perpetuates existing health disparities but also erodes public trust in AI technologies.

To promote fairness in AI-driven medicine, several strategies are necessary. First, **data diversity must be prioritized** — ensuring datasets include a wide range of ethnicities, genders, and socioeconomic backgrounds. This enhances model generalizability and accuracy for all patients.

Second, **Explainable AI (XAI)** should be used to make decision-making processes transparent. If healthcare professionals can understand why an AI recommends a particular treatment, they can better evaluate its appropriateness.

Finally, **regular audits** by ethicists and multidisciplinary teams should be conducted. These reviews assess the AI's fairness, accuracy, and potential for harm, ensuring continuous ethical compliance.

In conclusion, while AI offers significant advancements in personalized medicine, ethical deployment requires intentional design choices that **prioritize equity, transparency, and accountability**.