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Paradigm Shift of adult Cancer in Young age: An Emerging Public Health Warning

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Abstract

Cancer epidemiology is going through a significant change. More adults under 50 are being diagnosed with cancers that were once thought to be diseases of older people. This trend challenges traditional beliefs about cancer screening, prevention, and healthcare, calling for a fundamental shift rather than minor changes. This opinion argues for moving past standard age-based screening to earlier risk-based detection, improved diagnostic pathways, and precision medicine for eligible cases.

Introduction

Cancer has typically been seen as a disease of older age, but this view is becoming outdated. Evidence shows a real increase in several early-onset cancers, including colorectal, breast, endometrial, pancreatic, thyroid, and various gastrointestinal cancers. It's important to recognize that cancer in young adults is not just "younger cancer"; it often carries significant social, reproductive, economic, and psychological impacts over many years. Furthermore, several early-onset cancers are diagnosed late since both clinicians and patients may underestimate cancer risk in younger populations [1]. Early-onset cancers increased by about 79% globally from 1990 to 2019, while mortality rose nearly 28%. The sharpest increases were in colorectal, breast, pancreatic, kidney, and gastrointestinal cancers. This suggests that early-onset cancers may behave differently than those diagnosed later. They do not form a uniform group, but various studies indicate distinct patterns, more aggressive biology in certain cases, and different molecular subtype distributions. For instance, early-onset colorectal cancer often relates to obesity, metabolic syndrome, lack of exercise, diet, and genetic predisposition, while early-onset breast cancer connects more to reproductive factors, obesity, alcohol use, and subtype differences. This highlights the need for screening that considers both age and biological factors, as well as tailored diagnostic and treatment plans [1-2].

Discussion

Screening shift

Most national screening programs are still age-based, assuming that cancer rates only increase after middle age. As a result, younger adults with symptoms are often not included in screening pathways, leading to excessive reassurance, delayed referrals, and late-stage diagnoses. The best response is to enhance early diagnosis through more effective screening processes rather than only relying on routine age limits. Population screening is essential but insufficient for the growing number of young-onset cases because many patients exhibit symptoms before reaching typical screening ages. Screening should be reshaped around risk factors, family history, symptoms, and previous health issues rather than age alone. For colorectal cancer, current guidelines support screening starting at age 45 for average-risk adults, while high-risk individuals should be assessed sooner and referred promptly when symptoms occur. Similar rules apply to breast, endometrial, thyroid, and hereditary cancer syndromes, where family history or ongoing symptoms should lead to earlier investigations. A "one-size-fits-all" approach no longer works in a changing cancer landscape [1,3]. An improved model should combine evaluations triggered by symptoms with risk assessment tools, hereditary cancer evaluations, and early use of diagnostic imaging, endoscopy, and tissue sampling as needed. This would reduce delays in diagnosis, especially for patients with unexplained anemia, rectal bleeding, abdominal issues, breast lumps, thyroid nodules, swollen lymph nodes, or ongoing general symptoms. Healthcare systems must also ensure that younger adults with persistent symptoms receive the necessary evaluation instead of repeated reassurances [3].

Aggressive biology

One reason this issue is urgent is that early-onset cancers may not only be more frequent but also more aggressive or biologically different in some situations. Review literature shows notable differences in clinical, pathological, and molecular traits between early-onset and later-onset cancers, even if the cutoff age of 50 is merely a practical research guideline. This variation means that a diagnosis in a young adult should prompt more thorough investigative efforts rather than complacency [1]. Each newly diagnosed case in a young adult should be assessed with a focus on precision oncology whenever possible. This involves obtaining sufficient tumor tissue, conducting relevant immunohistochemistry, performing mismatch repair tests as needed, testing for genetic risks when there's a family history, and profiling for actionable molecular changes. For instance, molecular classification can influence prognosis, therapy choices, immunotherapy eligibility, and family counseling. In younger patients, precision testing is essential, not a luxury; it is a sensible response to potentially different biological characteristics [1,3].

Root causes

The increase in early-onset cancer requires a stronger focus on root causes. The most widely recognized contributors include obesity, westernized diets, lack of exercise, type 2 diabetes, alcohol consumption, sleep disruptions, and possible microbiome-related effects. These factors often begin early in life and can interact with genetic susceptibility to influence cancer development over decades. In other words, the clinical issues we face now may stem from long-term biological developments [5-8]. Prevention must extend beyond the clinic. Public health initiatives should encourage healthier diets, weight management, exercise, reduced alcohol intake, prevention of infections, and interventions in schools and workplaces targeting metabolic health. At the same time, more research is needed on environmental exposures, early-life factors, microbiome disruptions, and gene-environment interactions to make prevention more specific instead of generic [8].

Era of artificial intelligence

Artificial intelligence-based risk prediction models that integrate clinical, genomic, lifestyle, and imaging data could identify younger individuals who need earlier screenings. These precision approaches might eventually perform better than traditional age-based methods

Precision oncology

Liquid biopsy: This technology analyzes circulating tumor DNA for multi-cancer early detection tests and shows great potential.

Conclusion

If healthcare systems continue to see cancer mainly as a disease for older people, they risk overlooking a whole generation of patients with biologically distinct cancers that arise in their most productive years. The future of cancer control involves more than just lowering screening ages; it requires fundamentally redesigning prevention, early detection, and precision oncology to reflect individual risks. Cancer screening must become more focused on risk and symptoms, and every young cancer patient should

qualify for molecular precision testing whenever clinically appropriate. Ignoring this shift will lead to more delayed diagnoses and missed prevention opportunities, increasing the human and societal costs of early-onset cancer [9].

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References

1. Ugai T, Sasamoto N, Lee HY, Ando M, Song M, et al. (2022) Is early-onset cancer an emerging global epidemic? Current evidence and future implications. Nat Rev Clin Oncol 19(10): 656-673.
2. Bleyer A (2023) Increasing Cancer in Adolescents and Young Adults: Cancer Types and Causation Implications. J Adolesc Young Adult Oncol 12(3): 285-296.
3. American Cancer Society (2026) Colorectal Cancer Screening Guideline. update. pmc.ncbi.nlm.nih
4. American Cancer Society. New 2026 colorectal cancer screening guideline update. thelancet
5. Gaskell C, MacDonald R, Aleem E, Bendriss G (2025) Obesity and cancer: unravelling the microbiome's hidden role. Front Nutr 12: 1602603.
6. Avtanski D, Reddy V, Stojchevski R, Hadzi-Petrushev N, Mladenov M (2023) The microbiome in the obesity-breast cancer axis: diagnostic and therapeutic potential. Pathogens 12(12): 1402.
7. Wencheng S, Song B, Shenglong X, Dingjiacheng J (2026) The role of gut microbiota in obesity-related cancers. Semin Cancer Biol 122: 30-48.
8. Ruiz-Malagón AJ, Rodríguez-Sojo MJ, Redondo E, Rodríguez-Cabezas ME, Gálvez J (2025) Systematic review: The gut microbiota as a link between colorectal cancer and obesity. Obes Rev 26(4): e13872.
9. Rakib A, Al Mamun MA, Mandal M, Sinha P, Singh UP (2025) Obesity–cancer axis crosstalk: Molecular insights and clinical implications. Acta Pharmaceutica Sinica B 15(6): 2930-2944.