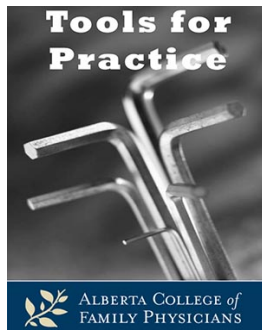


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CBC (Confusing Broad Check) for Screening?

Clinical Question: What is the evidence for screening with a CBC (Complete Blood Count) in asymptomatic, non-pregnant adults?

Bottom Line: CBC or its components should NOT be ordered for screening asymptomatic non-pregnant adults as it does not reduce mortality. When CBC is tested routinely without cause, up to 11% are abnormal but <1% require management change. It is unclear which patients benefit and serious disease is virtually never found.

Evidence:

- Systematic review of 16 Randomized Controlled Trials (RCTs) of periodic health checks (screening):¹
 - Four included CBC components with other screening tests and reported no cancer-specific or overall mortality reduction.
- CBC components in population screening, case-finding (looking for illness in higher risk people), hospital admission screening, and pre-op screening.
 - Population screening:
 - 1,080 non-pregnant women age 20-64, 11% anemic (hemoglobin <120g/L) but none had colon cancer.²
 - Case-finding: 11 observational studies.
 - Seven from 1987 review,³ evidence does not show benefit in identifying mild asymptomatic abnormalities. Example:
 - From 799 ambulatory patients 475 leukocyte tests, 11% abnormal but no asymptomatic disease identified.⁴
 - Four other studies:
 - 595 patients (1,540 CBC components ordered): 6.4% were abnormal, 1.2% investigated, 0.2% led to management change.⁵
 - Others similar.⁶⁻⁸
 - Pre-Op screening: From four observational studies (214-1,005 patients)⁹ management was changed 0%, 0%, 0.2% and 2%.
 - Admission screening: Two observational studies (301-302 patients), ~11% had abnormal CBC components and ≤0.6% led to management changes.^{10,11}
 - Stating "management changed" does not mean patients benefited.
 - Harms of excess investigation not described.

Context:

- Screening means testing healthy individuals for asymptomatic disease that could respond to early intervention to prevent suffering or mortality.
- When diseases are uncommon (~1%): Only ~16% of abnormal are real disease.¹²
 - ~80% of abnormal leukocyte screenings were physiological or test variance.²
 - 60% of abnormal CBC components normalized by 18 months.⁵
- Serious diseases like colon cancer have better screening tests (FIT testing).
- CDC, US Preventive Task Force, and Choosing Wisely do not recommend screening with CBC.¹³⁻¹⁵
 - Only pregnancy screening consistently advised.^{13,14}
- About 70% of primary care clinicians would order a screening CBC in a 55 year old woman^{16,17} and ordering CBC predicts other excess screening.¹⁶

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