



## **Choosing Wisely – Five Things Physicians & Patients Should Question**

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- 1. Don't perform routine annual checkups unless patients are likely to benefit; the frequency of checkups should be based on individual risk factors and preferences.**
- 2. During checkups, don't conduct comprehensive physical exams or routine lab testing.**

### **Who is likely to benefit from an annual checkup? Who is not?**

Patients who are likely to benefit from annual checkups include those who are overdue for recommended preventive care, are at high risk of undiagnosed chronic illness, rarely see their primary care physician, who have low self-rated health, or have a high degree of worry. Patients from historically excluded or marginalized groups, such as racial and ethnic minoritized groups and those with low income, are at increased risk of many health problems and are probably more likely to benefit from checkups.

Patients who do not meet any of these criteria probably do not need a checkup every year and should talk with their doctor about how often checkups should occur. Patients who consistently receive chronic and acute care at their primary care practice might have preventive services delivered "opportunistically" during these visits. Those who are unlikely to benefit from annual checkups include patients who are well-connected to primary care and up-to-date on recommended preventive care. Many younger patients, including those at low risk of chronic illness and patients without concerns, are unlikely to benefit from a checkup every year.

The Covid-19 pandemic has increased the number of patients who can benefit from checkups, such as those who decreased their use of in-person health care, are overdue for preventive services, or at risk of undiagnosed hypertension or depression.

### **Why not have a checkup every year with a physical examination and blood tests?**

Checkups are often erroneously called "annual physicals," and patients often expect "routine blood work." However, checkups need not happen every year, they do not need to include a comprehensive physical examination, and no organization recommends "routine blood work." For asymptomatic patients, beyond blood pressure measurement, body mass index (BMI) assessment, and cervical cancer screening for women, a regular screening physical examination has not been shown to improve health.

For laboratory testing, current recommendations for patients with previously normal results range from every 3 to 5 years for common tests such as blood glucose and lipid levels. The Medicare Annual Wellness Visit only includes prevention and explicitly does not include a routine physical examination or laboratory tests.

### **What are the potential benefits of a checkup?**

Checkups provide an opportunity to deliver recommended preventive services, like those recommended by the US Preventive Services Task Force, such as screenings for infections, chronic diseases, and cancer. Checkups also provide an opportunity to improve patients' perceptions of their health and may help foster trusting relationships between doctors and patients. These visits probably lead to increased detection of chronic diseases like hypertension and depression, and may improve control of risk factors like high blood pressure and high cholesterol. Although it follows logically that increased preventive services, disease detection, and perceived health might decrease mortality, checkups have not been proven to reduce cardiovascular events or mortality.

### **Summary of Update**

We conducted a review of the available literature in March 2021. Our methods are presented in detail elsewhere<sup>1</sup> but briefly described here. Since there is no common definition of checkups,<sup>2,3</sup> for our review we defined checkups as health care encounters that include multiple screenings and identification of risk factors, with a goal of initiating early interventions to prevent future illness.

Our review included studies with peer-reviewed outcome data from randomized trials or observational studies with a control group. Study interventions were required to meet our definition of a checkup and be delivered to adults in a primary care setting. Included studies were reported outcome data for one or more of seven domains: mortality; cardiovascular outcomes; detection or initiation of treatment for a new chronic disease; risk factor control; uptake of clinical preventive services; health behaviors, and patient-reported outcomes. We excluded studies of disease-specific interventions, studies including fewer than 200 patients, and manuscripts not published in English. For each included study, we examined data for the seven outcome domains and potential harms.

To identify studies meeting inclusion criteria, we identified randomized trials included in prior systematic reviews<sup>2-4</sup> and observational studies from a prior review<sup>2</sup> that were published in 2000 or later. Then, using search terms from two prior Cochrane reviews of randomized trials,<sup>3,4</sup> we conducted Ovid MEDLINE database queries for the period after each review's respective search date (through March 30, 2021). Finally, we conducted an Ovid MEDLINE query for observational studies published between January 1, 2000, and March 30, 2021. Abstracts were screened by two reviewers before full text review. At least two reviewers screened each full text manuscript. We also reviewed reference lists of each study meeting inclusion criteria.

After screening 1,921 identified abstracts, we screened full text manuscripts for 62 studies, and identified 32 studies that met inclusion criteria. Seventeen included studies (53%) were conducted in Europe, 11 (35%) in the United States, and the remainder in Asia (9%) or Canada (3%).

### **Discussion**

Checkups are one of the most common services in primary care, and are supported by patients, clinicians, and payers. These visits have also been described as general health checks, general medical

examinations, periodic health evaluations, routine visits, or wellness visits. Some components of checkups, such as health risk assessments including validated screening instruments, can be administered electronically or by phone prior to in-person visits.

Many patients consider “the annual physical” necessary,<sup>5</sup> and some patients may draw comfort from the ritual of a physical examination, but checkups do not necessarily need to occur every year or include a physical examination. While several studies have evaluated annual checkups, no clear evidence has demonstrated a need for them to occur every year. Also, beyond blood pressure measurement, BMI assessment, and cervical cancer screening for women, a regular screening physical examination has not been shown to improve health.<sup>6</sup>

There is also no evidence of a need for routine lab testing during a standard checkup visit. Lab testing intervals should instead follow relevant screening recommendations; for example, adults with normal blood glucose levels likely only need to be screened every 3 years,<sup>7,8</sup> and guidelines call for lab testing of lipid levels every 5 years.<sup>9</sup>

### **Evidence on the Benefits of Checkups**

The Choosing Wisely campaign offers medical societies and clinicians the opportunity to clarify the benefits of common services, and issue evidence-based statements to caution against potential overuse. In our review of checkups, we identified multiple outcome domains where there is clear evidence of benefits, perhaps none so clear as clinical preventive services. A total of nine studies conducted in North America—four randomized trials<sup>10-13</sup> and five observational studies<sup>14-18</sup>—clearly demonstrate the association between checkups and clinical preventive services. For example, data from a U.S. Accountable Care Organization demonstrated that Medicare AWWs were associated with increased completion of colorectal cancer screening, breast cancer screening, fall risk screening, pneumococcal vaccination, and other services.<sup>14</sup> Randomized trials have demonstrated increases in other preventive services such as influenza vaccination<sup>19</sup> and cervical cancer screening.<sup>20</sup>

Prior studies also demonstrate how checkups can improve patient-reported outcomes. In six randomized trials,<sup>10-12,21-23</sup> five produced improvements in one or more patient-reported outcomes,<sup>10-12,21,22</sup> including three trials in Medicare beneficiaries that identified improvements in outcomes such as health worry,<sup>19</sup> quality of well-being,<sup>10,11</sup> quality of life,<sup>10,19</sup> and self-rated health.<sup>10</sup>

Checkups may also benefit patients through regular contact with a usual source of care. These visits can provide an opportunity to build trust and rapport<sup>24</sup> and to strengthen doctor-patient relationships.<sup>25</sup> Checkups can also increase continuity of care, which is associated with desirable outcomes such as lower emergency and inpatient use.<sup>26</sup>

Both experimental<sup>27-30</sup> and observational<sup>31-36</sup> evidence demonstrates that checkups are associated with increased detection and treatment of chronic diseases; these increases may be concentrated in at-risk groups that are especially likely to benefit from checkups. For example, in a recent case-control study in the National Health Service (NHS), patients from socially deprived, ethnically diverse areas of London who completed a checkup were more likely to obtain a new statin prescription, and had higher odds of newly diagnosed diabetes, hypertension, and stage 3-5 chronic kidney disease.<sup>32</sup>

Data from seven randomized trials<sup>21,29,30,37-40</sup> and four observational studies,<sup>14,31,33,36</sup> indicate that checkups are associated with small to moderate improvements in control of risk factors such as blood

pressure, cholesterol, and cardiovascular risk scores. However, the evidence of checkups' effects on weight is mixed.<sup>29,30,38,39</sup>

Across nine randomized trials<sup>11,12,21,29,30,37-40</sup> and two observational studies,<sup>31,34</sup> checkups were sometimes associated with modest improvements in health behaviors such as physical activity and diet. For example, in one trial among Medicare beneficiaries, relative improvements in physical activity and dietary fat consumption were not persistent beyond the active intervention period.<sup>19</sup> Checkups have generally not been shown to reduce smoking.<sup>12,29-31,37,38,40</sup>

### **Areas Where There is a Lack of Evidence for the Benefits of Checkups**

As observed in prior reviews,<sup>2,3</sup> we did not find that checkups reduce mortality. Although checkups led to mortality benefits in two randomized trials in older adults,<sup>11,28</sup> 11 of 13 identified trials reported no significant all-cause mortality benefit.<sup>10,19,21,22,27,37,38,41-44</sup> Existing evidence also fails to demonstrate that checkups improve cardiovascular outcomes such as cardiovascular events or cardiovascular disease incidence.<sup>22,28,37,38,44</sup>

Studies have selectively demonstrated that checkups may produce harms.<sup>19,22,28,44</sup> However, observed harms sometimes coincided with observed intervention benefits. For example, in a trial of cardiovascular screenings in older men, the intervention group had longer inpatient length of stay for admissions related to COPD and stroke or transient ischemic attack, but also experienced a mortality decline.<sup>28</sup> In other instances, observed harms were poorly understood and may have been caused by factors besides checkups.<sup>44,45</sup> Although most insurers fully cover the cost of checkups, uninsured patients may have copays for these visits. Some services delivered during or after checkups (e.g., lab testing or zoster vaccination) may also be subject to patient cost sharing.

### **Maximizing the Value of Checkups**

Paradoxically, checkups are often completed by lower-risk patients who may derive relatively fewer benefits from these visits,<sup>3</sup> such as those with higher socioeconomic status<sup>46</sup> or lower cardiovascular risk.<sup>47</sup> When considering who might benefit the most from checkups overall—and annual checkups in particular—health systems should prioritize targeting at-risk populations with risk factors known to be amenable to checkups, including patients with overdue clinical preventive services, those with low self-rated health (which is associated with increased mortality<sup>48</sup>), and patients at high risk of undiagnosed chronic illness.

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