

## Messages that are too sure

**From:** [Key Concepts for assessing claims about treatment effects and making well-informed treatment choices \(Version 2022\)](#)

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### 1.1c Do not assume that treatment effects are certain.

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#### Explanation

Fair comparisons of treatments can provide a basis for confidence about the probability of beneficial and harmful effects of treatments. However, it is rarely, if ever, possible to be 100% certain about the size of treatment effects, or to predict exactly what will happen if a treatment is used. This is especially true for treatments that are intended to prevent adverse an development or effect happening a long time in the future. Fair comparisons of such treatments are difficult because they entail following people up for a very long time and it is rarely possible to ensure that people adhere to the advice they are given. Consequently, claims about the effects of such treatments are often based on [associations](#) and belief in explanations of how the treatments work. Some people argue that there should be different standards for judgements about the trustworthiness of claims when fair comparisons are difficult. However, it can be lethal not to acknowledge and reduce important uncertainties, even when there is limited potential for doing so. It is also important to recognise that certainty about treatment effects can change as new information becomes available. This is especially true for new problems and treatments, such as treatments for Covid-19.

For example, at the start of the Covid-19 pandemic, little was known about the effects of measures to control it. However, in less than a year, over 2000 [randomized trials](#) were registered [[Dillman 2020 \(SR\)](#)]. Dexamethasone – an inexpensive and widely used medicine – was shown to reduce mortality among patients with severe Covid-19 disease [[Sterne 2020 \(SR\)](#)]. On the other hand, no evidence was found to justify the use of another inexpensive and widely used medicine – hydroxychloroquine – and it was found to have harmful effects [[Singh 2021 \(SR\)](#)]. At the same time, there have been very few reports of fair comparisons of measures to reduce the spread of Covid-19 (such as closing schools), and major uncertainties exist about the effects – wanted and unwanted – of these measures [[Haber 2021 \(SR\)](#)].

#### Basis for this concept

Grading of Recommendations, Assessment, Development and Evaluations (GRADE) is a widely-used approach to making systematic and transparent judgements about the [certainty of evidence](#) and the [strength of recommendations](#) [[Alonso-Coello 2016](#), [Guyatt 2011a](#), [Guyatt 2008b](#)]. *UpToDate*, a widely used electronic medical textbook, contains over 9,400 recommendations made using the GRADE approach [[Agoritsas 2017 \(RS\)](#)]. Half (50%) of those recommendations were based on low-certainty evidence, 40% on moderate-certainty evidence, and only 10% on high-certainty evidence [[Agoritsas 2017 \(RS\)](#)]. At least 16 other studies have assessed the availability of reliable evidence for decisions made by doctors in general practice and various specialties. The approach used to assess the certainty of the evidence in those 16 studies was less rigorous. It was found that there is “high quality” evidence for between 11% and 80% of common decisions made by doctors and patients in different specialties (median 48%) and “no substantial evidence” for between 2% and 53% of common decisions (median 19%) [[Jamtvedt 2015 \(OR\)](#)].

Although the overall quality of evidence for complementary and alternative medicine is improving [[Bloom 2000 \(SR\)](#)], the certainty of the evidence for most complementary and alternative treatments

is low [[Cao 2015 \(SR\)](#), [Haller 2019 \(SR\)](#), [Houzé 2017 \(SR\)](#), [Hunt 2011 \(SR\)](#), [Meyer 2013 \(SR\)](#), [Millstine 2017 \(OR\)](#)]. The certainty of the evidence for most health system decisions is also low [[Ciapponi 2017 \(SR\)](#), [Herrera 2017 \(SR\)](#), [Pantoja 2017 \(SR\)](#), [Wiysonge 2017 \(SR\)](#)].

## Implications

It is important to recognise that there is some uncertainty about the effects of all treatments, and that there is likely to be more uncertainty about some types of treatments. Choices are still required but it is preferable to acknowledge, accept, and take account of uncertainty than to deny it and make misinformed and potentially dangerous decisions.

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