Prescrire International Editorial

Translated from ***Rev Prescrire*** **July 2014; 34 (369): 481**

Informed screening

The aim of medical screening programmes is to detect a disease or risk factors in order to cure the condition or take appropriate measures to prevent serious consequences from occurring in the future. The concept is simple in theory but far more complex in practice.

Screening is promoted for a variety of diseases and risk factors, in unborn children, newborns, and adults of all ages. Yet sometimes there is no consensus on diagnostic criteria or therapeutic management. And there may be no firm evidence that screening actually improves patient outcomes. And it should be remembered that some tests routinely carried out in healthy individuals actually represent a hidden form of screening.

Screening is based on the adage that *"prevention is better than cure"*, sometimes overlooking the most important principle of medical care: "*first, do no harm*". Can screening be harmful? Yes: in fact, if the screening test is not sufficiently accurate, individuals who are perfectly healthy may be labelled as "sick". Similarly, screening can be harmful if it leads to unnecessary invasive procedures or dangerous treatments, or if it has negative social or economic consequences (such as being denied a bank loan).

As with all other health interventions, it is essential to know the harm-benefit balance of screening tests, preferably based on comparative, randomised evaluation. A lower level of evidence may suffice, however, when a powerful non-invasive test enables action to be taken that clearly improves the prognosis of a serious illness, for example.

Whatever the type of evaluation, the adverse effects of screening tests must also be systematically assessed. Too many organised screening programmes ignore the need for this kind of analysis. Sometimes the risk of over-diagnosis is only realised when much harm has already been done; as with some "curative" treatments, the naive optimism of certain proponents of screening tests boils down to wishful thinking.

And mass screening programmes are not free of potential conflicts of interest, for example when they stem from a desire to turn healthy people into patients, stimulate medical activity, or generate a financial profit. This makes it all the more difficult to provide balanced information to persons invited (rather than "summoned") to come in for screening. Finally, it is crucial not to exaggerate the true benefits of screening (which are generally modest), or to minimise the risk of "false positives" and both direct and indirect adverse effects.

All those invited to take part in screening programmes must be in a position to make an informed, independent choice on whether or not to participate.

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