



Medical Eligibility Criteria

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2.1 Introduction

The World Health Organization's (WHO) medical eligibility criteria (MEC) were first published in 1996. The WHO MEC document is an internationally agreed set of recommendations that supports safe provision of contraceptive methods to individuals with a range of medical conditions or characteristics (the latter including, e.g., age, body mass index, smoking, breastfeeding). It is used globally to improve the quality of contraceptive care offered. The WHO MEC are kept up-to-date as new evidence emerges, through continuous monitoring and review of published literature. WHO MEC guidance was primarily intended for family planning programme makers in low- and middle-income countries, but the intention was that it should be adapted for a range of settings.

The most recent version of WHO MEC (the fifth edition) was published in 2015 and supersedes previous editions [1]. It contains over 2000 recommendations for use of 25 methods of contraception (hormonal methods, nonhormonal methods, permanent methods, barrier and emergency contraception), in the context of more than 80 medical conditions or medically relevant personal characteristics.

There are also the US MEC [2] and the UK MEC [3], which are adapted from WHO MEC to be relevant to populations in the USA and the UK. They were last fully updated in 2016 and take account of the changes and evidence in the WHO MEC of 2015. US MEC and UKMEC are generally very similar, but each gives guidance for some conditions that the other does not, and UK MEC considers only

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hormonal contraceptive methods, intrauterine contraception and emergency contraception.

2.2 What Are the MEC?

The MEC provide evidence-based guidance for contraceptive providers as to the contraceptive methods that women with a range of medical conditions and characteristics can use safely to prevent unintended pregnancy. Using MEC, a provider can advise a woman as to which contraceptive methods are generally safe for her to use. The MEC do not indicate the *best* or *most effective* method for a woman—such an evaluation must also take into account the woman’s preferences and requirements.

Whilst most women can safely use any contraceptive method, there are some conditions that may be associated with a potential increase in risk of adverse health events when certain methods are used. This may be because the method of contraception affects the condition or because the condition or its treatment affects the safety of the contraceptive.

In the MEC tables, the regular contraceptive methods are grouped under the following headings: levonorgestrel intrauterine system, copper-bearing intrauterine device, progestogen-only contraceptive implant, progestogen-only injectable, combined hormonal contraception and progestogen-only pill. Recommendations for ‘levonorgestrel intrauterine system’ relate to all the currently available 52 mg, 19.5 mg and 13.5 mg devices. Under ‘progestogen-only implant’ WHO and US MEC include both etonogestrel and levonorgestrel implants, but for the UK MEC, this is only the etonogestrel implant. Under ‘progestogen-only injectable’, WHO MEC guidance includes both medroxyprogesterone acetate and norethisterone enanthate, but US and UK MEC only medroxyprogesterone acetate (both intramuscular and subcutaneous preparations). For all MEC ‘combined hormonal contraception’ includes all formulations of combined pill, combined patch and combined vaginal ring; and ‘progestogen-only pill’ includes both desogestrel and “traditional” progestogen-only pills.

For each of the characteristics or medical conditions, the MEC tables indicate a MEC category 1, 2, 3 or 4 for each contraceptive method. The four categories are defined in Table 2.1.

As well as a MEC category for each condition and contraceptive method, the MEC tables provide summaries and clarifications of the evidence that supports the

Table 2.1 Medical eligibility criteria

MEC category	
1	No restriction to use of the method
2	The method can generally be used safely (benefits usually outweigh risks)
3	Use of the method is not usually recommended unless no other method is available or acceptable (risks usually outweigh benefits)
4	Use of the method represents an unacceptable health risk

MEC category. There are further explanatory comments at the end of each method section in the MEC documents.

Initiation and continuation of a method are sometimes distinguished and classified differently by the MEC. Initiation refers to the starting of a contraceptive method by a woman with an existing medical condition; continuation refers to a woman continuing the method that she was already taking at the time of first onset of a medical condition. Where MEC categories are different for initiation and continuation, this is because use of the method of contraception before the onset of the medical condition could potentially have been a contributing factor to development of the condition. That possibility could influence clinical decisions regarding continued use of the method. For example, the benefits of use of a progestogen-only pill generally outweigh risks (MEC 2) for a woman who has previously had an ischaemic stroke. If, however, she has a stroke while taking the progestogen-only pill, continued use of the method becomes MEC 3 (risks generally outweigh benefits).

It is important to note that whilst efficacy of a method may be affected by the condition or the medication required for the condition, the MEC category reflects the safety of use of the method.

2.3 Development and Updating of the MEC

WHO, US and UK MEC recommendations are developed through rigorous processes of global research and review. This involves input from a wide range of stakeholders and identification of new evidence relating to existing methods of contraception, new methods or new conditions in order to prioritise the research questions to be addressed. Systematic reviews of the literature are conducted, and quality of the identified evidence is assessed using GRADE methodology. A guideline development group of experts in contraception, research methodology and the conditions under consideration is assembled to review the evidence and assign MEC categories. MEC categories for existing methods and conditions can be upgraded and downgraded depending on new evidence. Most trials of contraception exclude women with chronic medical conditions, and so there is often little evidence on which to base safe prescribing. Where evidence is lacking, expert opinion is sought and MEC category is assigned by consensus of the guideline development group. MEC guidance is subjected to wide external peer review before approval.

2.4 Contraceptive Choice

Many factors determine a woman's choice of contraceptive method. Providing she is medically eligible, she should be able to choose the method that is most acceptable to her. For a method of contraception to be effective, it needs to be used correctly and consistently used and this is directly related to its acceptability.

2.5 Effectiveness of Contraception

Contraceptive methods that need to be used consistently and correctly with every act of sex have a wide range of effectiveness. Effectiveness of such methods varies with characteristics such as age and desire to prevent pregnancy. If used perfectly, short-acting contraceptive methods such as combined hormonal contraception and progestogen-only pills can be very effective; with typical use, however, risk of unintended pregnancy is significant. The methods known as long-acting reversible contraception (LARC) are the most effective methods; they are not user-dependent and are thus associated with low failure rate with both typical and perfect use (see table).

2.6 Drug Interactions

Certain medications can affect metabolism of contraceptive hormones; conversely, some contraceptive methods may affect metabolism of certain medications. Such drug interactions can result in decreased effectiveness of a hormonal contraceptive method, with a consequent increased risk of unintended pregnancy. Alternatively, the interaction may adversely affect the efficacy of a medication used to treat a medical condition, with implications for the woman's health and well-being. Online drug interaction checkers can be used to check for drug interactions with hormonal contraception.

It should be noted that the contraceptive effectiveness of the progestogen-only injectable and the levonorgestrel-releasing intrauterine system is not reduced by concurrent use of enzyme-inducing medications.

2.6.1 Conditions that Pose a Significant Risk for Pregnancy

Women who have a medical condition that increases the health risks during pregnancy and women taking drugs that are teratogenic or potentially teratogenic should be advised about the most effective methods of contraception.

2.6.2 Correct Use of MEC: Practical Considerations

MEC are valuable tools to support safe contraceptive prescribing, but in practice there are some common misconceptions that can lead to incorrect use of MEC. A guide to correct use and practical examples are given below.

2.6.3 MEC Relate to Use of CHC for Contraception

It is important to remember that MEC categories relate to use of contraceptive methods *for contraception*, but not for other indications. MEC recommendations reflect

the fact that if a particular contraceptive method is not suitable for a woman, there is a range of other effective options that she can use for contraception. In contrast, if a woman is using a contraceptive method for a non-contraceptive indication (e.g., management of symptoms of polycystic ovarian syndrome), there may not be an effective alternative. Balance of risk and benefit may therefore differ from MEC where a contraceptive method is being used for an indication other than contraception.

2.6.4 Different MEC Sometimes Offer Different Guidance

WHOMEK, USMEK and UKMEK categories sometimes differ from one another for the same condition and method of contraception. This is because they relate to different populations with different barriers to accessing contraception.

2.6.5 Women with Multiple MEC Conditions

Confusion can arise when considering the suitability of a contraceptive method for a woman who has multiple MEC conditions. The first point to make here is that MEC scores cannot simply be added. If that were the case, a woman with four medical conditions that are MEC 1 for use of a particular method would appear to have a complete contraindication to that method (MEC 4). In fact, a woman with any number of MEC 1 conditions can use the method without restriction.

Case 1: Multiple MEC 1 Conditions Patient 1 requests a progestogen-only implant. She is 35 years old (MEC 1) and has just had a first trimester abortion (MEC 1). She has controlled hypertension (MEC 1), non-migrainous headache (MEC 1), endometriosis (MEC 1) and a family history of breast cancer (MEC 1). The progestogen-only implant can be used without restriction by a woman with any or all of these (or other) MEC 1 conditions.

If a woman has a MEC 2 condition, however, its relevance must be considered in the context of any other MEC 2 or 3 conditions that she has. MEC 2 indicates that the benefits of use of a method generally outweigh risks, but it also flags up that there is a possible safety concern if a woman has other risk factors. A woman may have several MEC 2 conditions relating to health risks that are completely independent of one another, such that risks are not cumulative. For a woman with several MEC 2 conditions that all relate to the same health risk, however, a clinician may consider that the combined risk outweighs contraceptive benefit (particularly if there are safer effective alternatives).

Cases 2 and 3: The Role of MEC2 Patient 2 requests combined hormonal contraception. She is 41 years old (MEC 2), has a BMI of 31 kg/m² (MEC 2) and is epileptic (MEC 1). Her mother had a pulmonary embolism at age 47 (MEC 2).

Individually, each of the three MEC 2 conditions in this case does not contraindicate use of combined hormonal contraception. However, increasing age, obesity, family history of pulmonary embolism and use of combined hormonal contraception are all independent risk factors for venous thromboembolism. A clinician may consider that use of combined hormonal contraception by a woman with three MEC 2 conditions that relate to risk of venous thromboembolism could confer unacceptable risk. Alternative effective contraceptive methods that are not associated with increased risk of venous thromboembolism should be considered.

It is worth mentioning that this woman's epilepsy does not itself contraindicate use of any method of contraception (use of any method is MEC 1 for women with epilepsy). However medications taken for epilepsy could reduce effectiveness of some contraceptive methods; remember that drug interactions must always be considered alongside MEC when assessing suitability of a contraceptive method.

Patient 3 also has three MEC 2 conditions for use of combined hormonal contraception. She is 32 years old and breastfeeding her 4-month-old baby (MEC 2). She has migraine without aura (MEC 2) and cervical intraepithelial neoplasia (MEC 2). In this case, in contrast to patient 2, each of the three MEC 2 conditions relates to a different potential health risk. Combined, they do not cumulatively increase any one health risk and benefits are likely to outweigh risks. Note, however that there *are* alternative effective contraceptive options that are MEC 1 for the conditions that patient 3 has.

A MEC 3 category indicates that the risks associated with use of a method for contraception generally outweigh benefits. Where safer contraceptive alternatives are available, these should generally be used. If, however, safer alternatives are not available, or are not acceptable, use of a method for which the woman is MEC 3 may be considered *so long as* the user is fully aware of potential associated health risks. When making such a prescribing decision, any other MEC 2 or MEC 3 conditions that the woman has which relate to the same health risk must be taken into consideration.

Cases 4 and 5: Prescribing Decisions Around MEC 3 Patient 4 has had breast cancer in the past. This is a condition for which use of all hormonal methods of contraception is MEC 3. Patient 4 has excessively heavy menstrual bleeding that has resulted in anaemia. Patient 4 needs to be aware that hormonal contraception could potentially increase risk of future breast cancer and must weigh this against risk associated with unplanned pregnancy as well as benefit in terms of contraception and management of heavy menstrual bleeding. Clearly, she could also consider alternatives such as sterilisation for contraception in combination with endometrial ablation for bleed management.

Patient 5, who wishes to use combined hormonal contraception, has consistently elevated blood pressure, around 150/95 (MEC 3 for use of combined hormonal contraception). All other contraceptive methods considered by MEC are MEC 1 for use in this situation; thus there is a good choice of alternative contraceptive options that should be offered in preference. This is particularly important if the woman has

other risk factors for cardiovascular disease, even if they themselves are only MEC 2 conditions (such as age over 40 years or non-vascular diabetes).

MEC 4 conditions indicate that use of the method concerned is associated with unacceptable health risk, and alternative contraception should be used. Patient 6 has migraine with aura. MEC indicate that combined hormonal contraception is not a safe option for her (MEC 4) because of risk of ischaemic stroke, but progestogen-only methods would be considered safe options (these are MEC 1 or MEC 2 depending on MEC version).

2.7 The List of MEC Conditions Is Not Exhaustive

Conditions that are not listed in the MEC may still affect safety of use of contraception. The MEC are not exhaustive—partly because they would become unwieldy and partly because there is not evidence to inform safety of use of contraceptive methods by women with many less common medical conditions. Where a woman has a medical condition that is not included in the MEC, clinical judgement is required to assess whether use of a contraceptive method could increase risk of adverse health events. A condition that is not included in the MEC could still potentially make use of a contraceptive method inadvisable.

2.8 MEC Tools and Resources

MEC are one part of a set of resources aimed at improving contraceptive provision and care throughout the world. MEC inform decisions about *who* might use a particular contraceptive, through the provision of information and guidance about the safety and appropriateness of contraceptive methods.

The WHO has also developed a MEC wheel (paper and digital formats) that facilitates rapid determination of WHO MEC categories in the clinic setting. Similarly, the European Consortium for Emergency Contraception has produced a MEC wheel exclusively for determining suitability of emergency contraceptive methods [4]. Smartphone applications (apps) based on the WHO MEC and US MEC can facilitate assessment of a woman's eligibility for contraceptive methods. These are available to download at no cost.

Both the WHO MEC and US MEC have accompanying documents known as '*Selective Practice Recommendations for Contraceptive Use (SPR)*' [5, 6] which provide guidance on *how* to use various contraceptive methods safely and effectively once they have been deemed medically appropriate as per the MEC. Other WHO resources to assist contraceptive providers include the 'Global Handbook for Family Planning Providers' [7] and an implementation guide for the WHO MEC and SPR [8] to facilitate the integration of the MEC/SPR guidance into national family planning guidelines. This guide aims to help countries take ownership of the guidance provided in the MEC and SPR, to improve the usability of the guidance and to help turn family planning policy into practice.

2.9 Conclusion

The MEC provide evidence-based recommendations for contraceptive providers as to who can use a contraceptive method safely. The MEC do not indicate the best method for a woman nor the most effective method for her—her preferences and requirements will influence her choice of method from amongst those that MEC indicate to be safe. Contraceptive choice is highly important for women. Use of MEC can help expand provision of safe contraception for women around the world.

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