

# Octobre Rose 2016

*Dans le cadre de la célébration de la lutte contre le cancer du sein dans le monde, le Centre pour le Développement des Bonnes Pratiques en Santé (CDBPS-H) met à la disposition des lecteurs, cette brochure illustrant des résumés en Anglais et en Français, de revues systématiques Cochrane sur la prévention et la prise en charge du Cancer du sein.*

The Centre for Development of Best Practices in Health (CDBPH) provides to readers, this booklet illustrating summaries in English and French, of Cochrane systematic reviews on prevention and management of Breast Cancer.

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## 1- Screening for breast cancer with mammography

Screening with mammography uses X-ray imaging to find breast cancer before a lump can be felt. The goal is to treat cancer earlier, when a cure is more likely. The review includes seven trials that involved 600,000 women in the age range 39 to 74 years who were randomly assigned to receive screening mammograms or not. The studies which provided the most reliable information showed that screening did not reduce breast cancer mortality. Studies that were potentially more biased (less carefully done) found that screening reduced breast cancer mortality. However, screening will result in some women getting a cancer diagnosis even though their cancer would not have led to death or sickness. Currently, it is not possible to tell which women these are, and they are therefore likely to have breasts or lumps removed and to receive radiotherapy unnecessarily. If we assume that screening reduces breast cancer mortality by 15% after 13 years of follow-up and that overdiagnosis and overtreatment is at 30%, it means that for every 2000 women invited for screening throughout 10 years, one will avoid dying of breast cancer and 10 healthy women, who would not have been diagnosed if there had not been screening, will be treated unnecessarily. Furthermore, more than 200 women will experience important psychological distress including anxiety and uncertainty for years because of false positive findings.

Women invited to screening should be fully informed of both the benefits and harms. To help ensure that the requirements for informed choice for women contemplating whether or not to attend a screening programme can be met, we have written an evidence-based leaflet for lay people that is available in several languages on [www.cochrane.dk](http://www.cochrane.dk). Because of substantial advances in treatment and greater breast cancer awareness since the trials were carried out, it is likely that the absolute effect of screening today is smaller than in the trials. Recent observational studies show more overdiagnosis than in the trials and very little or no reduction in the incidence of advanced cancers with screening.

### Dépistage du cancer du sein par mammographie

*Le dépistage par mammographie utilise la radiographie pour détecter un cancer du sein avant qu'une grosseur ne soit palpable. L'objectif est de traiter le cancer de manière plus précoce afin d'accroître les chances de guérison. Cette revue inclut sept essais portant sur 600 000 femmes âgées de 39 à 74 ans randomisées pour des mammographies de dépistage ou une absence de mammographie. Les études rapportant les informations les plus fiables montraient que le dépistage ne réduisait pas la mortalité par cancer du sein. Les études qui étaient potentiellement les plus biaisées (les moins rigoureuses) indiquaient que le dépistage réduisait la mortalité par cancer du sein. Néanmoins, suite au dépistage, certaines femmes se voient diagnostiquer un cancer qui n'aurait pas entraîné de maladie ou de décès. À l'heure actuelle, il est impossible d'identifier les femmes concernées, qui risquent donc de subir une ablation du sein ou de la grosseur et de recevoir une radiothérapie inutilement. Si l'on considère que le dépistage réduit la mortalité par cancer du sein de 15 % au bout de 13 ans de suivi et que le surdiagnostic et le*

surtraitement s'élèvent à 30 %, cela signifie que, pour 2 000 femmes invitées à participer à un dépistage au cours d'une période de 10 ans, un décès par cancer du sein sera évité et 10 femmes en bonne santé qui n'auraient pas été diagnostiquées si elles n'avaient pas participé au dépistage seront traitées inutilement. En outre, plus de 200 femmes se trouveront dans une situation de détresse psychologique, d'anxiété et d'incertitude importantes pendant des années en raison de résultats faussement positifs.

Les femmes invitées à participer à un dépistage devraient être pleinement informées des effets bénéfiques et délétères. Pour garantir le respect du choix éclairé des femmes envisageant de participer à un programme de dépistage, nous avons rédigé une brochure factuelle destinée au grand public et disponible dans sept langues à l'adresse [www.cochrane.dk](http://www.cochrane.dk). En raison des importants progrès réalisés en matière de traitement et d'une plus grande sensibilisation au cancer du sein depuis la réalisation de ces essais, il est probable que l'effet absolu du dépistage soit aujourd'hui plus limité. De récentes études observationnelles suggèrent que le dépistage entraîne davantage de surdiagnostics que dans ces essais et une réduction limitée ou inexistante de l'incidence des cancers avancés.

**Citation:** Gøtzsche PC, Jørgensen KJ. Screening for breast cancer with mammography. Cochrane Database of Systematic Reviews 2013, Issue 6. Art. No.: CD001877. DOI: 10.1002/14651858.CD001877.pub5.

<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001877.pub5/epdf>

## 2- Vitamin D supplementation for prevention of cancer in adults

### **Review question**

Does vitamin D supplementation prevent cancer?

### **Background**

The available evidence on vitamin D and cancer occurrence is intriguing but inconclusive. Many observational studies as well as randomised trials suggest that high vitamin D levels in the blood are related to reduced cancer occurrence. However, results of randomised trials testing the effect of vitamin D supplementation for cancer prevention are contradictory.

### **Study characteristics**

The aim of this systematic review was to analyse the benefits and harms of the different forms of vitamin D especially on cancer occurrence. A total of 18 trials provided data for this review; 50,623 participants were randomly assigned to either vitamin D or placebo or no treatment. All trials were conducted in high-income countries.

### **Key results**

The age range of the participants was 47 to 97 years and on average 81% were women. The majority of the included participants did not have vitamin D deficiency. Vitamin D administration lasted on average six years and most trial investigators used vitamin D<sub>3</sub> (cholecalciferol). We did not find firm evidence that vitamin D supplementation decreases or increases cancer occurrence in predominantly elderly community-dwelling women. We observed decreases in all-cause

mortality and cancer-related mortality among the vitamin D/D<sub>3</sub> treated participants in comparison with the participants in the control groups. However, using trial sequential analysis, a statistical approach to reconfirm or question these findings, we conclude that these results could be due to random errors (play of chance). We also found evidence that combined vitamin D<sub>3</sub> and calcium supplements increased renal stone occurrence, but it remains unclear from the included trials whether vitamin D<sub>3</sub>, calcium, or both were responsible for this effect. Moreover, these results could also be due to random errors (play of chance).

### **Quality of the evidence**

A large number of the study participants left the trials before completion, and this raises concerns regarding the validity of the results. Most of the trials were judged not to be well and fairly conducted so that the results were likely to be biased (that is, possibly an overestimation of benefits and underestimation of harms).

### **Currentness of evidence**

This evidence is up to date as of February 2014.

## **Supplémentation en vitamine D pour la prévention du cancer chez l'adulte**

### **Question de la revue**

La supplémentation en vitamine D prévient-elle le cancer ?

### **Contexte**

Les preuves disponibles concernant la vitamine D et la survenue de cancer sont intrigantes mais pas concluantes. De nombreuses études observationnelles, ainsi que des essais randomisés suggèrent que des niveaux élevés de vitamine D dans le sang sont liés à une incidence réduite de cancer. Cependant, les résultats d'essais randomisés portant sur l'effet de la supplémentation en vitamine D pour la prévention du cancer sont contradictoires.

### **Les caractéristiques de l'étude**

L'objectif de cette revue systématique était d'analyser les bénéfices et inconvénients de différentes formes de vitamine D, plus spécifiquement sur l'incidence du cancer. Un total de 18 essais ont fourni des données pour cette revue ; 50 623 participants ont été aléatoirement assignés à la vitamine D ou à un placebo ou à l'absence de traitement. Tous les essais ont été réalisés dans des pays à revenu élevé.

### **Résultats principaux**

L'âge des participants était de 47 à 97 ans et en moyenne 81 % étaient des femmes. La majorité des participants inclus n'avaient pas de carence en vitamine D. L'administration de vitamine D a duré en moyenne six ans et la plupart des investigateurs des essais utilisaient de la vitamine D<sub>3</sub> (colécalciférol). Nous n'avons pas trouvé de preuves solides indiquant que la supplémentation en vitamine D diminue ou augmente l'incidence du cancer, principalement chez les femmes âgées vivant en communauté. Nous avons observé une réduction de la mortalité toutes causes et de la mortalité liée au cancer chez les participants traités par vitamine D/D<sub>3</sub>, en comparaison avec les

participants des groupes témoins. Néanmoins, l'utilisation de l'analyse séquentielle des essais, une approche statistique permettant de confirmer ou de remettre en question ces constatations, nous a amenés à conclure que ces résultats pourraient être dus à des erreurs aléatoires (jeu du hasard). Nous avons également identifié des preuves que l'association de suppléments à la vitamine D<sub>3</sub> et au calcium augmente la survenue de calculs rénaux, mais les essais inclus ne permettent pas de conclure si la vitamine D<sub>3</sub>, le calcium, ou les deux étaient responsables de cet effet. En outre, ces résultats pourraient également être dus à des erreurs aléatoires (jeu du hasard).

### **Qualité des preuves**

Un grand nombre de participants abandonnaient les essais, ce qui soulève des inquiétudes concernant la validité des résultats. Il a été estimé que la plupart des essais n'avait pas été correctement et impartialement conduits, de sorte que les résultats étaient susceptibles d'être biaisés (c'est-à-dire, une possible surestimation des effets bénéfiques et une sous-estimation des effets nocifs).

### **Actualité des preuves**

Les preuves sont à jour en février 2014.

**Citation:** Bjelakovic G, Gluud LL, Nikolova D, Whitfield K, Krstic G, Wetterslev J, Gluud C. Vitamin D supplementation for prevention of cancer in adults. Cochrane Database of Systematic Reviews 2014, Issue 6. Art. No.: CD007469. DOI: 10.1002/14651858.CD007469.pub2.  
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD007469.pub2/epdf>

## 3- Partial breast irradiation for early breast cancer

What is the issue?

Women with early breast cancer who choose to keep their breast need to have radiotherapy (RT) as well as surgery to remove the cancer to make sure it does not regrow in the breast. RT is treatment with high energy x-rays. Having RT for breast cancer usually means 25 to 30 visits to the RT department, five times per week.

If breast cancer does regrow in the same breast (called local recurrence), it tends to come back in the area it was removed from. Women can also grow a new cancer (new 'elsewhere primary') in another part of the same breast. We are not sure if the RT given to stop cancer regrowth where the first cancer was does stop the growth of 'elsewhere primaries'.

Breast cancer is the most common cancer that women get. When women choose to keep their breast, it is important that they are happy with how it looks after treatment (cosmesis).

Why does it matter?

We always want to treat the smallest area we can with RT because this means fewer side effects. Treating only part of the breast could mean that RT might be able to be used again in another part of the same breast if needed. New ways of giving RT mean that treating part of the breast can be done with fewer treatments. This is likely to be easier for women and cost less money.

We asked if giving RT to part of the breast (called partial breast irradiation (PBI)) is as good as giving RT to the whole breast. It would need to control the cancer as well as giving RT to the whole breast does. It would also be important that the PBI gives about the same side effects and breast appearance as treating the whole breast.

We found seven studies, which involved 7586 women. Our evidence is current to May 2015. Local recurrence was rare, but more common with PBI (low-quality evidence) and the breast appearance (scored by doctors) was worse with PBI (low-quality evidence). Survival did not differ (high-quality evidence). Scarring in the breast was worse with PBI (moderate-quality evidence). The same number of women died of breast cancer with either treatment (moderate-quality evidence). The same number of women developed spread of breast cancer around their body with either treatment (moderate-quality evidence). There appeared to be the same number of women who eventually needed the breast removed (mastectomy) after both treatments. Mastectomy could happen because of cancer regrowth in the breast or bad side effects (low-quality evidence).

This means that at the moment, PBI does not give the same cancer control in the breast as treating the whole breast, but the difference was small. It may cause worse side effects. There are five big ongoing studies that will be important to answer this question. We hope to have a clearer answer in the next update of this review.

**Citation:** Hickey BE, Lehman M, Francis DP, See AM. Partial breast irradiation for early breast cancer. Cochrane Database of Systematic Reviews 2016, Issue 7. Art. No.: CD007077. DOI: 10.1002/14651858.CD007077.pub3. <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD007077.pub3/epdf>

#### 4- Fraction size in radiation therapy for breast conservation in early breast cancer

##### **Review question**

We asked if giving fewer radiation treatments (using a higher radiation dose at each visit) was as effective as the conventional 25 to 30 radiation treatments for women with early breast cancer who have breast conserving therapy (keep their breast).

##### **Background**

Breast cancer is the most common cancer diagnosed in women, with one in eight women in the United States and Australia, and one in nine women in the United Kingdom being diagnosed with the condition by age 85 years. Breast conserving therapy (removing the tumour but keeping an intact breast) has proven to be as effective as mastectomy (removing the breast tissue) in terms of survival for women with cancer confined to the breast (or the local lymph nodes, or both), as long as a five to six-week course of radiation therapy is delivered. This involves 25 to 30 visits to a radiation oncology department. Without radiation therapy after breast conserving surgery there is a significant risk of breast cancer returning in the breast (local recurrence). Furthermore, for every local recurrence avoided with radiation, one death is avoided at 15 years. Many women

prefer breast conservation which has resulted in an increased demand for radiation services. Giving fewer daily radiation treatments (fractions) would be beneficial to women if this has the same effect on tumour control and survival, and cosmetic outcome. In order to reduce the number of treatments, the radiation dose delivered per fraction is increased. This may also reduce demand on radiation resources and be more convenient for women.

### **Study characteristics**

Nine studies, involving 8228 women, were included in this review. Most of the women in the studies (91%) had tumours 3 cm or less in size, all had complete removal of the tumour on pathology and 68% had no evidence of cancer in their lymph nodes. Where the breast size was known, 83% had small or medium breasts.

### **Key results**

The evidence is current up to May 2015. Local recurrence was not different for women having fewer treatments (four fewer local relapses per 1000 (where the true value may be anywhere between 16 fewer to 10 more local relapses per 1000)). Breast appearance was not different for women undergoing fewer treatments (31 fewer fair/poor breast appearance per 1000 (where the true value may be anywhere between 59 fewer to 3 more per 1000 with fair/poor breast appearance)). Survival was not altered by having fewer treatments (13 fewer deaths per 1000 (where the true value could be between 31 fewer to 5 more deaths per 1000)) and there was no significant difference in late skin toxicity (4 more episodes of toxicity per 1000; where the true value may be anywhere between 14 fewer to 36 more episodes of toxicity per 1000) or radiation toxicity. Acute skin toxicity is decreased with fewer treatments (326 fewer events per 1000 (where the true value may be anywhere between 264 fewer to 374 fewer acute skin toxicity events per 1000)). This review indicates that for women who fit these criteria, using fewer radiation treatments after tumour removal gives the same cancer control, with less skin reaction at the time and the likely the same side-effects in the long term.

### **Quality of the evidence**

We found high quality evidence for the following outcomes: local recurrence-free survival, breast appearance, toxicity, overall survival and breast cancer-specific survival. We found moderate quality evidence for relapse-free survival, and no data for mastectomy rate (mastectomy may be required because of local recurrence or unacceptable treatment-related toxicity) or costs.

**Citation:** Hickey BE, James ML, Lehman M, Hider PN, Jeffery M, Francis DP, See AM. Fraction size in radiation therapy for breast conservation in early breast cancer. Cochrane Database of Systematic Reviews 2016, Issue 7. Art. No.: CD003860. DOI: 10.1002/14651858.CD003860.pub4.

<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD003860.pub4/epdf>



## 5- Psychological interventions for women with metastatic breast cancer

Cancer that has spread beyond the breast (metastatic breast cancer) is frightening and distressing and can lead women to experience psychological symptoms, such as depression. There is a belief that these psychological symptoms can make the cancer worse.

Treatment for psychological symptoms is sometimes offered to women with metastatic breast cancer, either individually or in a group. In 1989 one study examined the effect of this treatment, offered to a group of women, and it found that it led to them feeling psychologically better and living longer. Subsequent studies did not seem to replicate the findings from the 1989 study, causing uncertainty about the effects of psychological treatments for women with metastatic breast cancer.

This review examined the studies to date to see what effect psychological treatments had on women with metastatic breast cancer. We found 10 studies with a total of 1378 women with metastatic breast cancer. Three of the studies used a psychological treatment known as cognitive behavioural therapy (CBT), four studies used supportive-expressive group therapy (SEGT), while the remaining three studies used treatments that were delivered on an individual basis and were neither CBT nor SEGT.

We performed statistical analysis and found that the odds ratio (a measure of association between an intervention and an outcome) for survival of women with metastatic breast cancer one year after receiving psychological treatment was 1.46, suggesting that there was an association between the psychological treatment and improved survival. This finding was not found when looking at the odds ratio of survival at five years. We also found some evidence that psychological treatments in the short term (for example, one year) may produce a small reduction in pain and improve some psychological symptoms. However, making comparisons across these studies was difficult as they differed in their conduct, treatments and measures used. Moreover, we cannot rule out that the psychological treatments could also cause psychological harm.

### **Interventions psychologiques chez les femmes atteintes d'un cancer du sein métastatique**

*Un cancer qui se propage au-delà du sein (cancer du sein métastatique) est effrayant, stressant, et peut entraîner l'apparition de symptômes psychologiques tels qu'une dépression. On pense que ces symptômes psychologiques sont susceptibles d'aggraver le cancer.*

*Un traitement des symptômes psychologiques individuel ou en groupe est parfois offert aux femmes atteintes d'un cancer du sein métastatique. En 1989, une étude examinant les effets d'un tel traitement chez un groupe de femmes avait rapporté qu'elles se sentaient mieux psychologiquement et vivaient plus longtemps. Les études subséquentes n'avaient pas reproduit les résultats de cette étude de 1989, suscitant des incertitudes concernant les effets des traitements psychologiques chez les femmes atteintes d'un cancer du sein métastatique.*

*Cette revue a examiné les études disponibles à ce jour afin de déterminer les effets des traitements psychologiques chez les femmes atteintes d'un cancer du sein métastatique. Nous avons identifié 10 études portant sur un total de 1 378 femmes atteintes d'un cancer du sein métastatique. Trois de ces études examinaient un traitement psychologique connu sous le nom de thérapie cognitivo-comportementale (TCC), quatre études examinaient une thérapie de groupe de soutien par l'expression (TGSE), tandis que les trois autres études examinaient des traitements individuels qui n'étaient ni des TCC, ni des TGSE.*

*Nous avons effectué une analyse statistique et avons découvert que le rapport des cotes (une mesure de l'association entre l'intervention et le résultat) de la survie des femmes atteintes d'un cancer du sein métastatique un an après le traitement psychologique était de 1,46, ce qui suggérait une association entre le traitement psychologique et l'amélioration de la survie. Ce résultat n'était pas observé pour le rapport des cotes de la survie à cinq ans. Nous avons également identifié des preuves indiquant que les traitements psychologiques à court terme (un an, par exemple) pourraient produire une petite réduction de la douleur et améliorer certains symptômes psychologiques. Néanmoins, il était difficile d'effectuer des comparaisons sur l'ensemble des études car elles utilisaient différents plans, traitements et mesures. De plus, la possibilité que les traitements psychologiques puissent également provoquer des dommages psychologiques ne peut pas être exclue.*

**Citation:** Mustafa M, Carson-Stevens A, Gillespie D, Edwards AGK. Psychological interventions for women with metastatic breast cancer. Cochrane Database of Systematic Reviews 2013, Issue 6. Art. No.: CD004253. DOI: 10.1002/14651858.CD004253.pub4. <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD004253.pub4/epdf>

## 6- Sequencing of chemotherapy and radiotherapy for women following surgery for early breast cancer

Both chemotherapy and radiotherapy reduce the risk of breast cancer recurring and the risk of dying from breast cancer. Generally, these therapies are given after surgery but there is uncertainty about whether they should be given at the same time (concurrently) or one after the other (sequentially). If they are used sequentially, the radiotherapy or the chemotherapy could be used first and concerns have been expressed that the effectiveness of the therapy that is delayed might be reduced. However, it has also been suggested that using chemotherapy and radiotherapy at the same time may be more toxic than keeping them separate. This review examined the current evidence on the best way to administer chemotherapy and radiotherapy following breast-conserving surgery. We were able to include three randomised trials. Two of these, with 853 women, assessed radiotherapy and chemotherapy given at the same time versus chemotherapy given first followed by radiotherapy. The third trial randomised 244 women to radiotherapy followed by chemotherapy versus chemotherapy followed by radiotherapy. The evidence produced by these three well-conducted trials suggests that recurrence of a woman's cancer and her chances of dying from breast cancer are similar regardless of the order of the

treatments, provided that both radiotherapy and chemotherapy are commenced within seven months of the surgery. The trials provided limited information regarding adverse events, side effects or quality of life associated with the different sequences of treatment. The limited evidence available does suggest that the frequency and severity of side effects of chemotherapy and radiotherapy are similar regardless of which sequence is used. However, it should be noted that the women in these trials were treated, on average, in the early 2000s. As a result, the trials do not assess the modern types of radiotherapy, and new types of chemotherapy (such as taxanes) or other drugs (such as Herceptin). We will add relevant trials that include these more recent treatments to future updates of this review.

### **Séquence de chimiothérapie et radiothérapie chez les femmes après la chirurgie du cancer du sein au stade précoce**

*La chimiothérapie et la radiothérapie réduisent toutes deux le risque de récurrence du cancer du sein et le risque de décès dû au cancer du sein. Généralement, ces thérapies sont administrées après la chirurgie mais il existe une incertitude quant à savoir s'il convient de les administrer en même temps (simultanément) ou l'une après l'autre (de façon séquentielle). Si elles sont utilisées de façon séquentielle, la radiothérapie ou la chimiothérapie pourrait être utilisée en premier mais des inquiétudes ont été soulevées quant à la diminution éventuelle de l'efficacité de la thérapie qui est différée. Toutefois, il a également été suggéré que l'utilisation de la chimiothérapie et de la radiothérapie en même temps pourrait être plus toxique que leur administration séparément. Cette revue a examiné les preuves actuellement disponibles concernant la meilleure façon d'administrer la chimiothérapie et la radiothérapie suite à la chirurgie de conservation du sein. Nous avons pu inclure trois essais randomisés. Deux de ces essais, incluant 853 femmes, ont comparé la radiothérapie et la chimiothérapie administrées en même temps par rapport à la chimiothérapie administrée en premier suivie de la radiothérapie. Le troisième essai a randomisé 244 femmes dans le groupe de radiothérapie suivie de chimiothérapie versus la chimiothérapie suivie de radiothérapie. Les preuves apportées par ces trois essais bien menés laissent entendre que la récurrence du cancer d'une femme et les risques qu'elle décède du cancer du sein sont similaires quel que soit l'ordre des traitements, à condition que la radiothérapie et la chimiothérapie soient toutes deux commencées dans les sept mois suivant la chirurgie. Les essais ont apporté des données limitées concernant les événements indésirables, les effets secondaires ou la qualité de vie associés aux différentes séquences de traitement. Les preuves disponibles limitées laissent entendre que la fréquence et la sévérité des effets secondaires de la chimiothérapie et de la radiothérapie sont similaires quelle que soit la séquence utilisée. Toutefois, il convient de noter que les femmes dans ces essais ont été traitées, en moyenne, au début des années 2000. En conséquence, les essais n'évaluent pas les types modernes de radiothérapie, et les nouveaux types de chimiothérapie (tels que les taxanes) ou d'autres médicaments (tels que l'Herceptin). Nous ajouterons les essais pertinents qui incluent ces traitements plus récents dans les futures mises à jour de cette revue.*

**Citation:** Hickey BE, Francis DP, Lehman M. Sequencing of chemotherapy and radiotherapy for early breast cancer. Cochrane Database of Systematic Reviews 2013, Issue 4. Art. No.: CD005212. DOI: 10.1002/14651858.CD005212.pub3. <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005212.pub3/epdf>

## 7- Exercise for women receiving chemotherapy or radiation therapy or both (adjuvant therapy) for breast cancer

### **What is the issue?**

In the past, women receiving cancer treatment were usually advised to rest and avoid physical activity. But, we now know that too much rest and too little physical activity can lead to muscle wasting. This reduces women's physical fitness level and may limit their regular activities. Women also often have other side effects that can affect their daily lives, such as extreme tiredness (fatigue), depression, and reduced mental functioning, for example being able to remember things or keep focused.

### **Why does it matter?**

The side effects of breast cancer treatment can interfere with daily activities and return to work. It is important to learn of ways to reduce these side effects.

**We asked** if physical exercise during chemotherapy or radiation therapy or both helped to reduce treatment side effects. Side effects studied included tiredness, depression, and reduced physical fitness and mental functioning. We also studied general effects such as health-related, cancer-specific, and cancer site-specific quality of life. Questionnaires for cancer-specific quality of life ask questions that are important for patients with cancer in general, for example about pain or nausea. Cancer site-specific quality of life is measured with questionnaires that ask women with breast cancer about topics that are especially important to them, for example about breast symptoms or body image. We only included questionnaires that have been shown to be reliable.

**We found** 32 studies involving 2626 women. The included studies were published up through March 2015. Not all studies considered all of these potential side effects. Combining the results of these studies suggests that physical exercise probably improves physical fitness and slightly lessens fatigue. These studies also suggest that physical exercise probably results in little or no improvement in cancer-specific quality of life and depression. Exercise may improve mental function and slightly improve cancer site-specific quality of life, although the quality of the evidence was low for both of these outcomes. It may result in little or no improvement in health-related quality of life, however the quality of evidence was low for this outcome. The quality of evidence may have been low because many of the studies did not have enough participants to observe small differences and because results may be biased due to people assessing the outcomes knowing which participants were in the control group.

Importantly, physical exercise did not harm most women. Very few women experienced discomfort or pain in their arms or legs.

### What does this mean?

It appears that exercise during cancer treatment can help lessen fatigue and improve physical fitness. It probably results in little or no improvement in cancer-specific quality of life and depression. It is unknown whether it helps for other side effects. At least nine current studies will help to answer the question if and how much exercise helps with the mentioned side effects and other side effects.

**Citation:** Furmaniak AC, Menig M, Markes MH. Exercise for women receiving adjuvant therapy for breast cancer. Cochrane Database of Systematic Reviews 2016, Issue 9. Art. No.: CD005001. DOI: 10.1002/14651858.CD005001.pub3.  
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005001.pub3/epdf>

## 8- Exercise for women receiving chemotherapy or radiation therapy or both (adjuvant therapy) for breast cancer

### What is the issue?

In the past, women receiving cancer treatment were usually advised to rest and avoid physical activity. But, we now know that too much rest and too little physical activity can lead to muscle wasting. This reduces women's physical fitness level and may limit their regular activities. Women also often have other side effects that can affect their daily lives, such as extreme tiredness (fatigue), depression, and reduced mental functioning, for example being able to remember things or keep focused.

### Why does it matter?

The side effects of breast cancer treatment can interfere with daily activities and return to work. It is important to learn of ways to reduce these side effects.

**We asked** if physical exercise during chemotherapy or radiation therapy or both helped to reduce treatment side effects. Side effects studied included tiredness, depression, and reduced physical fitness and mental functioning. We also studied general effects such as health-related, cancer-specific, and cancer site-specific quality of life. Questionnaires for cancer-specific quality of life ask questions that are important for patients with cancer in general, for example about pain or nausea. Cancer site-specific quality of life is measured with questionnaires that ask women with breast cancer about topics that are especially important to them, for example about breast symptoms or body image. We only included questionnaires that have been shown to be reliable.

**We found** 32 studies involving 2626 women. The included studies were published up through March 2015. Not all studies considered all of these potential side effects. Combining the results of these studies suggests that physical exercise probably improves physical fitness and slightly lessens fatigue. These studies also suggest that physical exercise probably results in little or no improvement in cancer-specific quality of life and depression. Exercise may improve mental function and slightly improve cancer site-specific quality of life, although the quality of the evidence was low for both of these outcomes. It may result in little or no improvement in health-related quality of life, however the quality of evidence was low for this outcome. The quality of

evidence may have been low because many of the studies did not have enough participants to observe small differences and because results may be biased due to people assessing the outcomes knowing which participants were in the control group.

Importantly, physical exercise did not harm most women. Very few women experienced discomfort or pain in their arms or legs.

### **What does this mean?**

It appears that exercise during cancer treatment can help lessen fatigue and improve physical fitness. It probably results in little or no improvement in cancer-specific quality of life and depression. It is unknown whether it helps for other side effects. At least nine current studies will help to answer the question if and how much exercise helps with the mentioned side effects and other side effects.

**Citation:** Furmaniak AC, Menig M, Markes MH. Exercise for women receiving adjuvant therapy for breast cancer. Cochrane Database of Systematic Reviews 2016, Issue 9. Art. No.: CD005001. DOI: 10.1002/14651858.CD005001.pub3.  
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005001.pub3/epdf>

## 9- Can music interventions benefit cancer patients?

### **The issue**

Cancer may result in extensive emotional, physical and social suffering. Current cancer care increasingly incorporates psychosocial interventions to improve quality of life. Music therapy and music medicine interventions have been used to alleviate symptoms and treatment side effects and address psychosocial needs in people with cancer. In music medicine interventions, the patient simply listens to pre-recorded music that is offered by a medical professional. Music therapy requires the implementation of a music intervention by a trained music therapist, the presence of a therapeutic process and the use of personally tailored music experiences.

### **The aim of the review**

This review is an update of a previous Cochrane review from 2011, which included 30 studies and found support for an effect of music interventions on several psychological and physical outcomes. For this review update, we searched for additional trials studying the effect of music interventions on psychological and physical outcomes in people with cancer. We searched for published and ongoing studies up to January 2016. We considered all studies in which music therapy or music medicine was compared with standard treatment alone or standard care combined with other treatments or placebo.

### **What are the main findings?**

We identified 22 new studies, so the evidence in this review update now rests on 52 studies with 3731 participants. The findings suggest that music therapy and music medicine interventions may have a beneficial effect on anxiety, pain, fatigue, heart rate, respiratory rate and blood pressure in people with cancer. Because of the very low quality of the evidence for depression, it is unclear what impact music interventions may have. Music therapy but not music medicine interventions

may improve patients' quality of life. We did not find evidence that music interventions improve mood, distress or physical functioning, but only a few trials studied these outcomes. We could not draw any conclusions about the effect of music interventions on immunologic functioning, coping, resilience or communication outcomes because there were not enough trials looking at these aspects. Therefore, more research is needed.

No adverse effects of music interventions were reported.

### **Quality of the evidence**

Most trials were at high risk of bias, so these results need to be interpreted with caution. We did not identify any conflicts of interests in the included studies.

### **What are the conclusions?**

We conclude that music interventions may have beneficial effects on anxiety, pain, fatigue and quality of life (QoL) in people with cancer. Furthermore, music may have a small positive effect on heart rate, respiratory rate and blood pressure. Reduction of anxiety, fatigue and pain are important outcomes for people with cancer, as they have an impact on health and overall QoL. Therefore, we recommend considering the inclusion of music therapy and music medicine interventions in psychosocial cancer care.

**Citation:** Bradt J, Dileo C, Magill L, Teague A. Music interventions for improving psychological and physical outcomes in cancer patients. Cochrane Database of Systematic Reviews 2016, Issue 8. Art. No.: CD006911. DOI: 10.1002/14651858.CD006911.pub3.

<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD006911.pub3/epdf>

## **10- Antibiotics to prevent surgical site infection after breast cancer surgery**

Breast cancer accounts for one in 10 of all new cancer cases diagnosed and surgical removal of the breast is a common treatment approach. An infection of the surgical wound is often a complication of surgery and taking antibiotics just before the operation significantly reduces the chances of developing an infection. The review is not able to establish which antibiotic is most appropriate. No trials were found which considered the effect of antibiotics when the operation involved immediate breast reconstruction.

### **Les antibiotiques pour éviter une infection du site opératoire après une chirurgie du cancer du sein**

*Le cancer du sein représente un sur 10 nouveaux cas de cancer diagnostiqués et l'ablation chirurgicale du sein est une approche de traitement courante. L'infection de la plaie opératoire est une complication fréquente de la chirurgie et la prise d'antibiotiques juste avant l'intervention réduit sensiblement les risques de développement d'une infection. Cette revue ne permet pas de déterminer l'antibiotique le plus efficace. Aussi, aucun essai n'a été trouvé examinant les effets*

*des antibiotiques dans le cas d'une intervention chirurgicale comportant une reconstruction mammaire immédiate.*

**Citation:** Jones DJ, Bunn F, Bell-Syer SV. Prophylactic antibiotics to prevent surgical site infection after breast cancer surgery. Cochrane Database of Systematic Reviews 2014, Issue 3. Art. No.: CD005360. DOI: 10.1002/14651858.CD005360.pub4..  
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005360.pub4/epdf>

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