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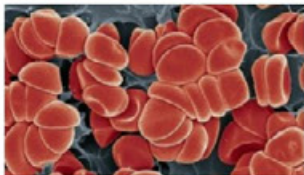
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### CANCER SURVIVORS OFTEN PLAGUED BY PTSD

BJH - volume 15, issue 7, October 2018, pp 14-18  
*K. Haustermans, M. Lambrecht, M. Thomas, MD, PhD*

Cancer patients may often experience post-traumatic stress disorder (PTSD) in the months after their tumors are diagnosed, and mental health issues can sometimes linger for years, a Malaysian study suggests. PTSD often involves women with breast cancer. This communication system is hijacked in cancer. Tumour-derived extracellular vesicles enter the circulation and carry targeting motifs and

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### MINISTER DE BLOCK ANNOUNCES FULL REIMBURSEMENT OF ONCOFREEZING

BLOG - April 2018 | GOVERNMENT, POLITICS

Good news for cancer patients who fear that their desire to have children would go unfulfilled because of their illness. This week, the Belgian health minister Maggie De Block decided to make ‘oncofreezing’ fully refundable. This means that it is easier for cancer patients to pick up their plans to extend their families where they left off before the cancer treatment.

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### BREAST CANCER AND PREGNANCY-RELATED ISSUES

BJH - volume 12, issue 1, February 2018, pp 14-18  
*B. Nguyen, E. de Azambuja, G. Viglietti, M. Lambertini, S. Martel*

Breast cancer and pregnancy-related issues are important areas of concern for young women. Prior pregnancies and breastfeeding may impact the risk of developing breast cancer and its biologic features. Nowadays, thanks to major advances in oncology practice, breast cancer patients have excellent survival outcomes; hence, survivorship issues including the possibility to constitute a family after...

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### LUNG CANCER SCREENING PROGRAMS: BLACK OR WHITE?

BJH - volume 11, Issue 5, September 2017, pp 2089-2095  
*C. Caglevic, C. Rolfo, C. Soza-Ried, E. Bustamante, E. S. Santos, L. E. Raez, V. Domínguez MD*

Lung cancer is a frequent malignancy worldwide with a high mortality rate. Most patients are diagnosed in advanced or metastatic stages that are not amenable to curative treatments, resulting in a poor overall survival rate. Screening programs could provide a solution to this problem, but it is unclear whether the great cost and possible risks that patients must face justify their implementation for lung cancer.

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### PLANCKENDAEL ZOO WELCOMES YOUNG CANCER PATIENTS AND THEIR FAMILIES

BLOG - April 2017 | IN THE MEDIA

Undergoing a cancer treatment can be hard, especially for children. But cancer also impacts the entire family. And that is the reason why the Family Day came into life. A great day to enjoy being a family together, and to put thoughts of illness to the back of your mind. Every first sunday in October, the famous Planckendael open range zoo in Muizen is the place to be. Fathers, mothers, brothers and

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### EXTRACELLULAR VESICLES TO DIAGNOSE AND TREAT CANCER

BJH - volume 11, issue 3, March 2017, pp 2089-2095  
*A. Hendrix, B. Dhondt, Eng, G. Vergauwen, H. Denys, J. Tulkens, L. Lippens, S. Jeurissen*

Extracellular vesicles transfer lipids, nucleic acids and membrane-associated as well as intraluminal proteins between cells to maintain homeostasis and regulate physiological functions. This communication system is hijacked in cancer. Tumour-derived extracellular vesicles enter the circulation and carry targeting motifs and unique messages for cell-type specific instruction of distant ecosystems to foster

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REGULATORY ISSUES IN HEMATOLOGY

JOURNAL SCAN HEMATOLOGY

CONGRESS NEWS

INDEX VOLUME 13, ISSUE 1, FEBRUARY 2019

REVIEW HEMATOLOGY
<b>THE POTENTIAL OF PROTON THERAPY IN OESOPHAGEAL CANCER TREATMENT</b> <i>K. Haustermans, M. Lambrecht, M. Thomas, MD, PhD</i>
PRACTICE GUIDELINES
<b>PRIMARY SQUAMOUS CELL CARCINOMA OF THE MALE POSTERIOR URETHRA: A RARE UROGENITAL MALIGNANCY</b> <i>E. Roussel, M. Albersen, MD, PhD</i>
PHARMACOTHERAPY
<b>THE STRATEGIC PLAN FOR PAEDIATRIC CANCER TREATMENT AND CLINICAL RESEARCH DEVELOPMENT IN BELGIUM</b> <i>A. Ferster, A. Uyttebroeck, A. van Damme, B. Brichard, B. De Moerloose, C. Piette, D. Heenen, G. Laureys, J. van der Werff ten Bosch, K. Norga, MD, PhD</i>
HEMATOCASE
<b>MOLECULAR TEST ALGORITHMS FOR DIGESTIVE TUMOURS</b> <i>A. Hendlisz, A. Hébrant, A. Jouret-Mourin, B. Maes, E. Van Cutsem, F. Dedeurwaerdere, G. Froyen, G. Martens, G. de Hertogh, H.A. Poirel, Ir, J-L. van Laethem, J. De Grève, J. Van der Meulen, J. Vanhuyse, J. Vermeij, K. Geboes, L. Vanacker, M. Chintinne, M. Gomez-Galdon, M. Peeters, M. Simoens, M. Van den Bulcke, M. de Man, M. van den Eynde, MD, N. D'Haene, N. Van Damme, P. Lefesvre, P. Pauwels, P. Peeters, P. Vannuffel, PhD, R. Salgado, S. Tejpar, T. Van Den Mooter, X. Sagaert</i>
HEMATOTHESIS
<b>THE POTENTIAL OF PROTON THERAPY IN HEMATOLOGY TREATMENT</b> <i>K. Haustermans, M. Lambrecht, M. Thomas, MD, PhD</i>
REGULATORY ISSUES IN HEMATOLOGY
<b>PRIMARY SQUAMOUS CELL CARCINOMA OF THE MALE POSTERIOR URETHRA: A RARE UROGENITAL MALIGNANCY</b> <i>E. Roussel, M. Albersen, MD, PhD</i>
JOURNAL SCAN HEMATOLOGY
<b>THE STRATEGIC PLAN FOR PAEDIATRIC CANCER TREATMENT AND CLINICAL RESEARCH DEVELOPMENT IN BELGIUM</b> <i>A. Ferster, A. Uyttebroeck, A. van Damme, B. Brichard, B. De Moerloose, C. Piette, D. Heenen, G. Laureys, J. van der Werff ten Bosch, K. Norga, MD, PhD</i>
CONGRESS NEWS
<b>MOLECULAR TEST ALGORITHMS FOR DIGESTIVE TUMOURS</b> <i>A. Hendlisz, A. Hébrant, A. Jouret-Mourin, B. Maes, E. Van Cutsem, F. Dedeurwaerdere, G. Froyen, G. Martens, G. de Hertogh, H.A. Poirel, Ir, J-L. van Laethem, J. De Grève, J. Van der Meulen, J. Vanhuyse, J. Vermeij, K. Geboes, L. Vanacker, M. Chintinne, M. Gomez-Galdon, M. Peeters, M. Simoens, M. Van den Bulcke, M. de Man, M. van den Eynde, MD, N. D'Haene, N. Van Damme, P. Lefesvre, P. Pauwels, P. Peeters, P. Vannuffel, PhD, R. Salgado, S. Tejpar, T. Van Den Mooter, X. Sagaert</i>

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# DEMONS-MEIGS SYNDROME SECONDARY TO AN OVARIAN BRENNER TUMOUR: CASE REPORT AND LITERATURE SURVEY

By: [K. Haustermans](#), [M. Lambrecht](#), [M. Thomas, MD, PhD](#)

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## SUMMARY

This oncocase reports the exceptional case of a 65-year-old woman presenting a Demons-Meigs syndrome characterised by dyspnoea issuing from a transsudative pleural effusion together with an important unilateral right ovarian mass and ascites. The diagnosis of a Brenner type histology, a rare and generally benign ovarian affection, was obtained after complete surgical removal of the ovarian tumour. Once discharged, the patient entered in a sustained complete response and thus potential cure. (BELG J MED ONCOL 2019;13(7):301-4)

## INTRODUCTION

Radiotherapy has become the standard of care in the curative treatment of locally advanced oesophageal cancer, either in the preoperative or definitive setting.<sup>1-3</sup> With the increasing use of multimodality therapy, the risk of serious side effects rises. Especially radiation doses to the lung and heart seem to correlate with toxicity and postoperative complications after trimodality treatment.<sup>4-7</sup> The use of advanced radiotherapy techniques, such as intensity-modulated radiotherapy (IMRT) and volumetric arc therapy (VMAT), allows for a dose reduction to the organs at risk (OAR) while maintaining or even increasing the dose to the target volume, compared with 2-dimensional (2D) or 3-dimensional conformal radiotherapy techniques (3D-CRT). Unfortunately, the clinical benefit of such dosimetric differences is only documented in comparative studies, and evidence from prospective randomised trials is lacking. Still, the dosimetric advantage of IMRT over 3D-CRT has translated into improved survival and less toxicity.<sup>8-10</sup> Recently, proton beam therapy (PBT) has become more widely available. The unique physical features of protons (Bragg peak) combined with sophisticated delivery strategies such as pencil-beam scanning (PBS-PBT) have a tremendous potential to further spare OAR, thereby overcoming the limitations of traditional photon therapy.<sup>11-15</sup> PBS-PBT, in contrast to passively scattered PBT (PS-PBT), applies lateral and longitudinal modulation of the Bragg peak beam to achieve optimal coverage of the tumour volume. This new technology allows for intensity-modulated proton therapy (IMPT) that delivers non-uniform dose distributions from each treatment beam, thereby further increasing dose conformity and normal tissue sparing (Figure 1).<sup>16-18</sup>

## CURRENT EVIDENCE FOR THE USE OF PROTON BEAM THERAPY IN OESOPHAGEAL CANCER

The dosimetric advantages of PBT have been suggested in several in silico studies (Table 1).<sup>11-17</sup> In a retrospective analysis of 727 patients treated with PS-PBT, IMPT or IMRT, both PSPBT and IMPT resulted in lower radiation doses to the heart and cardiac substructures, such as atria, ventricles and coronary arteries, compared with IMRT.<sup>18</sup> In general, PBT seems to be superior to photons in lowering doses to OAR. However, there are no prospective randomised controlled trials assessing the improvement in patients outcomes, so data are limited to institutional observational datasets. One of the first clinical experiences of PS-PBT with concurrent chemotherapy showed comparable efficacy compared with photon therapy and a lower incidence of late effects such as pneumonitis and pleural and pericardial effusion.<sup>19,20</sup> In an institutional analysis of the research group at the MD Anderson Cancer Center, the incidence of postoperative pulmonary complications was reduced with the use of IMRT and PSPBT compared to 3D-CRT, likely due to the associated lower mean lung dose.<sup>21</sup> A recent multi-institutional retrospective analysis further supports that PS-PBT may reduce postoperative complications and may be associated with favourable long-term outcomes.<sup>22</sup> Another retrospective analysis of 343 patients showed an improved overall, progression-free and loco-regional failure-free survival with either PS-PBT or IMPT compared to IMRT.<sup>23</sup>

### [Subtitle] Downside of the implementation of proton beam therapy in oesophagal cancer

Geometrical, anatomical and physical uncertainties greatly affect the position of the Bragg peak and therefore the dose distribution. This especially pertains to targets in the thorax and upper abdomen, including the distal oesophagus, that move as a result of diaphragmatic motion, leading to changes in the densities and tissues seen by the protons. Moreover, IMPT is affected by the potential interference between patient and beam delivery motions (interplay effect). Also tumour shrinkage contributes to changes in tissue density.<sup>24</sup> Therefore, robust optimisation against breathing motion, patient setup errors, baseline shifts and range uncertainties are key elements in PBT treatment planning.<sup>25-27</sup> Several respiratory motion management strategies have been proposed: implementation of 4D-planning CT scan with 4D-robustness optimisation, active breathing control with breath hold, beam angle selection and rescanning.<sup>26,28,29</sup> Since the increasing use of PBT in oesophageal cancer, further investigation of specific tools for treatment planning

### [Subsubtitle] Future perspectives

Although there is consensus regarding the indications for PBT in paediatric and skull base tumours, the benefit of PBT in oesophageal cancer has yet to be demonstrated. Randomised controlled trials (RCT) are considered the gold standard to compare efficacy and toxicity of treatments. However, when comparing radiotherapy techniques, some limitations to this approach exist.<sup>30</sup> The main objective of applying PBT is often lowering toxicities thanks to the superior dose distribution of protons. Second, because of the rapid evolution of radiotherapy techniques, long publication times and the latency of radiation induced complications, published data from RCT can be outdated. Therefore, to investigate the real clinical benefit of PBT, considerable effort should be made in setting up large multicentre collaborations to accurately select patients based on normal tissue complication probability (NTCP) models. It is important to identify the patients who might benefit most from this new treatment, particularly since the cost of a treatment with PBT is substantial. Therefore, validated multifactorial NTCP models, based on clinical and treatment-related factors and dosimetric signatures, are needed. The rationale behind a model-based approach is that PBT will only lead to improved clinical outcome due to less toxicity in patients when two essential requirements are both met: (1) normal tissue sparing can actually be obtained with PBT (a different dose); and (2) a different dose will result in a clinically significant lower complication risk (or a lower NTCP).<sup>31</sup> Therefore, in case of conducting a RCT, population enrichment is needed where the patients who most likely benefit from PBT are randomised. The European Particle Therapy Network of the European Society of Radiotherapy and Oncology will play a major role in coordinating prospective data registries and clinical trials for PBT on a European level.<sup>32</sup>

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By: [K. Haustermans](#), [M. Lambrecht](#), [M. Thomas, MD, PhD](#)

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This oncocase reports the exceptional case of a 65-year-old woman presenting a Demons-Meigs syndrome characterised by dyspnoea issuing from a transsudative pleural effusion together with an important unilateral right ovarian mass and ascites. The diagnosis of a Brenner type histology, a rare and generally benign ovarian affection, was obtained after complete surgical removal of the ovarian tumour. Once discharged, the patient entered in a sustained complete response and thus potential cure. (BELG J MED ONCOL 2019;13(7):301-4)

## INTRODUCTION

Radiotherapy has become the standard of care in the curative treatment of locally advanced oesophageal cancer, either in the preoperative or definitive setting.<sup>1-3</sup> With the increasing use of multimodality therapy, the risk of serious side effects rises. Especially radiation doses to the lung and heart seem to correlate with toxicity and postoperative complications after trimodality treatment.<sup>4-7</sup> The use of advanced radiotherapy techniques, such as intensity-modulated radiotherapy (IMRT) and volumetric arc therapy (VMAT), allows for a dose reduction to the organs at risk (OAR) while maintaining or even increasing the dose to the target volume, compared with 2-dimensional (2D) or 3-dimensional conformal radiotherapy techniques (3D-CRT). Unfortunately, the clinical benefit of such dosimetric differences is only documented in comparative studies, and evidence from prospective randomised trials is lacking. Still, the dosimetric advantage of IMRT over 3D-CRT has translated into improved survival and less toxicity.<sup>8-10</sup> Recently, proton beam therapy (PBT) has become more widely available. The unique physical features of protons (Bragg peak) combined with sophisticated delivery strategies such as pencil-beam scanning (PBS-PBT) have a tremendous potential to further spare OAR, thereby overcoming the limitations of traditional photon therapy.<sup>11-15</sup> PBS-PBT, in contrast to passively scattered PBT (PS-PBT), applies lateral and longitudinal modulation of the Bragg peak beam to achieve optimal coverage of the tumour volume. This new technology allows for intensity-modulated proton therapy (IMPT) that delivers non-uniform dose distributions from each treatment beam, thereby further increasing dose conformity and normal tissue sparing (Figure 1).<sup>16-18</sup>

## CURRENT EVIDENCE FOR THE USE OF PROTON BEAM THERAPY IN OESOPHAGEAL CANCER

The dosimetric advantages of PBT have been suggested in several in silico studies (Table 1).<sup>11-17</sup> In a retrospective analysis of 727 patients treated with PS-PBT, IMPT or IMRT, both PSPBT and IMPT resulted in lower radiation doses to the heart and cardiac substructures, such as atria, ventricles and coronary arteries, compared with IMRT.<sup>18</sup> In general, PBT seems to be superior to photons in lowering doses to OAR. However, there are no prospective randomised controlled trials assessing the improvement in patients outcomes, so data are limited to institutional observational datasets. One of the first clinical experiences of PS-PBT with concurrent chemotherapy showed comparable efficacy compared with photon therapy and a lower incidence of late effects such as pneumonitis and pleural and pericardial effusion.<sup>19,20</sup> In an institutional analysis of the research group at the MD Anderson Cancer Center, the incidence of postoperative pulmonary complications was reduced with the use of IMRT and PSPBT compared to 3D-CRT, likely due to the associated lower mean lung dose.<sup>21</sup> A recent multi-institutional retrospective analysis further supports that PS-PBT may reduce postoperative complications and may be associated with favourable long-term outcomes.<sup>22</sup> Another retrospective analysis of 343 patients showed an improved overall, progression-free and loco-regional failure-free survival with either PS-PBT or IMPT compared to IMRT.<sup>23</sup>

## [Subtitle] Downside of the Implementation of proton beam therapy in oesophagal cancer

Geometrical, anatomical and physical uncertainties greatly affect the position of the Bragg peak and therefore the dose distribution. This especially pertains to targets in the thorax and upper abdomen, including the distal oesophagus, that move as a result of diaphragmatic motion, leading to changes in the densities and tissues seen by the protons. Moreover, IMPT is affected by the potential interference between patient and beam delivery motions (interplay effect). Also tumour shrinkage contributes to changes in tissue density.<sup>24</sup> Therefore, robust optimisation against breathing motion, patient setup errors, baseline shifts and range uncertainties are key elements in PBT treatment planning.<sup>25-27</sup> Several respiratory motion management strategies have been proposed: implementation of 4D-planning CT scan with 4D-robustness optimisation, active breathing control with breath hold, beam angle selection and rescanning.<sup>26,28,29</sup> Since the increasing use of PBT in oesophageal cancer, further investigation of specific tools for treatment planning

## [Subsubtitle] Future perspectives

Although there is consensus regarding the indications for PBT in paediatric and skull base tumours, the benefit of PBT in oesophageal cancer has yet to be demonstrated. Randomised controlled trials (RCT) are considered the gold standard to compare efficacy and toxicity of treatments. However, when comparing radiotherapy techniques, some limitations to this approach exist.<sup>30</sup> The main objective of applying PBT is often lowering toxicities thanks to the superior dose distribution of protons. Second, because of the rapid evolution of radiotherapy techniques, long publication times and the latency of radiation induced complications, published data from RCT can be outdated. Therefore, to investigate the real clinical benefit of PBT, considerable effort should be made in setting up large multicentre collaborations to accurately select patients based on normal tissue complication probability (NTCP) models. It is important to identify the patients who might benefit most from this new treatment, particularly since the cost of a treatment with PBT is substantial. Therefore, validated multifactorial NTCP models, based on clinical and treatment-related factors and dosimetric signatures, are needed. The rationale behind a model-based approach is that PBT will only lead to improved clinical outcome due to less toxicity in patients when two essential requirements are both met: (1) normal tissue sparing can actually be obtained with PBT (a different dose); and (2) a different dose will result in a clinically significant lower complication risk (or a lower NTCP).<sup>31</sup> Therefore, in case of conducting a RCT, population enrichment is needed where the patients who most likely benefit from PBT are randomised. The European Particle Therapy Network of the European Society of Radiotherapy and Oncology will play a major role in coordinating prospective data registries and clinical trials for PBT on a European level.<sup>32</sup>

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# MINISTER DE BLOCK ANNOUNCES FULL REIMBURSEMENT OF ONCOFREEZING

August 2019 | **HEALTH INNOVATION** | Kyrrah de Vries



Good news for cancer patients who fear that their desire to have children would go unfulfilled because of their illness. This week, the Belgian health minister Maggie De Block decided to make ‘oncofreezing’ fully refundable. This means that it is easier for cancer patients to pick up their plans to extend their families where they left off before the cancer treatment.

## ONCOFREEZING

Oncofreezing is also known as cryopreservation, and it is a practice that usually involves young patients who are facing a treatment that can impair their fertility, such as chemotherapy. Material is taken and cryogenically frozen, in order to be used at a later stage. This involves ovums, sperm cells as well as ovarian or testicular tissues. Thanks to this technique, young patients do not have to abandon their dreams of becoming parents.

## DOUBLE AGONY

Cancer, and more specifically its treatment can compromise the fertility of the patient. Minister De Block says: “Being diagnosed with cancer is very hard to cope with. But if you also have to take in the fact that you may not be able to have children, the agony is doubled. By reimbursing oncofreezing, we want to alleviate the situation and take some of the worries away for the patients. That way, they can commit themselves for 100 percent to their own healing process. If after treatment they rekindle their plans to have a baby, then they can do so without any problems.”

So far, in nine months time, over 300 patients have resorted to having their ovums or sperm cells frozen and stored. Minister De Block is currently looking to extend the reimbursement of oncofreezing to patients of other illnesses.

## Prevention

It is a costly treatment that can cost between 1,300 and 3,400 euros. Because of the prohibitive cost of oncofreezing minister De Block decided in 2017 to fully reimburse oncofreezing for patients who are about to undergo chemotherapy, and for women who have their ovaries removed for reasons of prevention.

In nine months after the ministerial ruling, 303 patients had material cryogenically frozen, of which 209 were men and 94 were women. About 10 percent of these patiens was under sixteen years old.

The ministry of Public Health has allocated 4 million euros for reimbursement of oncofreezing, and so far the budget allows for more people to be helped. There will be an information campaign to inform patients and care givers.

## Stem cell

Minister De Block is also considering extending the reimbursement scheme to more patients. These primarily involve women with borderline ovarian tumors, as well as patients who need to undergo a blood stem cell transplantation as treatment for a rare non-cancerous blood disorder.

## Locations

Belgium currently has 18 centers for reproductive medicine that offer oncofreezing, out of which 17 have reached an agreement with RIZIV, the national institute for health insurance. In these 17 locations patiens can have reproductive materials frozen at no cost. Eight locations have specialized facilities for patients under sixteen years old. [Click here](#) to see the list of locations.

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# CHRONIC NEUTROPHILIC LEUKEMIA: NEW SCIENCE AND NEW DIAGNOSTIC CRITERIA

August 2019 | **HEALTH INNOVATION** | Kyrarah de Vries

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**Chronic neutrophilic leukemia (CNL) is a distinct myeloproliferative neoplasm defined by persistent, predominantly mature neutrophil proliferation, marrow granulocyte hyperplasia, and frequent splenomegaly. The seminal discovery of oncogenic driver mutations in CSF3R in the majority of patients with CNL in 2013 generated a new scientific framework for this disease as it deepened our understanding of its molecular**

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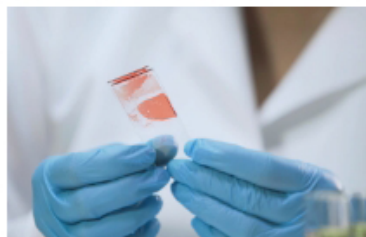
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## REVIEW HEMATOLOGY



### CRUCIALE FACTOR ONTDEKT IN TROMBINE-AANMAAK BIJ HEMOFILIEPATIËNTEN

Tegenwoordig is de trombine-generatie test een veelgebruikte methode om de kans op overmatig bloeden te bepalen. Met deze test kun je ook een hemofiliepatiënt identificeren. Als hemofilie-patiënt heb je namelijk een laag vermogen om trombine aan te maken. [Read more](#)

## PRACTICE GUIDELINES



### VERSCHILLEN TUSSEN HEMOFILIE A EN HEMOFILIE B

Hemofilie is een zeldzame, erfelijke ziekte die voornamelijk bij mannen voorkomt. Bij deze ziekte werkt bloedstolling niet goed en hierdoor duren bloedingen veel langer bij hemofiliepatiënten. Hemofilie komt voor in 2 subtypes: hemofilie A en hemofilie B. Bij hemofilie A is minder of helemaal geen stollingseiwit factor VIII aanwezig, bij hemofilie B is minder of helemaal geen stollingseiwit factor IX aanwezig. [Read more](#)

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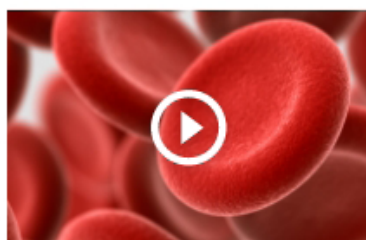


### GEEN LINK ORALE ANTISTOLLINGSMIDDELEN EN HERSENBLOEDINGEN

In patiënten met primaire breintumoren of breinmetastases lijkt er geen verband te zijn tussen het gebruik van direct werkende orale anticoagulantia (antistollingsmiddelen) en het ontstaan van intracraniale bloedingen, volgens het Journal of Thrombosis and Haemostasis (1).

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### VERHOOGD RISICO OP BLOEDSTOLSELS NA HORMOONTABLETTEN

Uit onderzoek aan de universiteit van Nottingham is gebleken dat het risico op een bloedstolsel in de aders na hormoontherapie (HRT) voor vrouwen met overgangsklachten mede wordt bepaald door de manier waarop de medicatie wordt toegediend. Dat meldde het gerenommeerde medisch tijdschrift The British Medical Journal (BMJ)..

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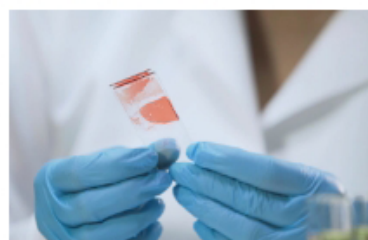
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