USPSTF Testicular Examination Nomination—Self-Examinations and Examinations in a Clinical Setting

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Abstract
In 2004, the U.S. Preventive Services Task Force (USPSTF) published a Grade D recommendation for both testicular self-examination (TSE) and clinical evaluation to screen for testicular cancer in asymptomatic males. This review committee reaffirmed these recommendations in 2009 and again in 2011 (Testicular Cancer: Screening Release Date: April 2011. Final Update Summary: Testicular Cancer: Screening. U.S. Preventive Services Task Force. September 2016). The 2011 USPSTF review found no significant evidence that would warrant a change from the last full review in 2004. We believe that the USPSTF erred in its assessments. As acknowledged in the task force report, testicular cancer is not believed to be preventable, and treatment of early detected testicular cancer is generally associated with very favorable outcomes; it is our belief therefore that every encouragement should be given to early detection. We are therefore requesting that the USPSTF review the D rating for testicular examination, both in a clinical setting and as self-examination. We are requesting this, as recent studies and public health warrant a change in grade. The new studies build on earlier studies that support the benefits of regular screening by individuals and their physicians. Further, and equally important, we believe that the current grade and attendant information confuses men and boys about the importance of self-care and wellness and continues to inadvertently reinforce negative cultural attitudes. We believe that adjusting the rating to a Grade B is both warranted and necessary.

Keywords
testicular self-examination, general health and wellness, testicular cancer, oncology/cancer, health policy issues, health-care issues, health promotion and disease prevention, health-care issues, men’s health interventions

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Background
2004, the U.S. Preventive Services Task Force (USPSTF) published a Grade D recommendation for both testicular self-examination (TSE) and clinical evaluation to screen for testicular cancer in asymptomatic males. This review committee reaffirmed these recommendations in 2009 and again in 2011. (Testicular Cancer: Screening Release Date: April 2011. Final Update Summary: Testicular Cancer: Screening. U.S. Preventive Services Task Force. September 2016) The 2011 USPSTF review found no significant evidence that would warrant a change from the last full review in 2004.
We believe that the USPSTF erred in its assessments. As acknowledged in the task force report, testicular cancer is not believed to be preventable, and treatment of early detected testicular cancer is generally associated with very favorable outcomes; it is our belief therefore that every encouragement should be given to early detection. We are therefore requesting that the USPSTF review the D rating for testicular examination, both in a clinical setting and as self-examination. We are requesting this, as recent studies and public health warrant a change in grade. The new studies build on earlier studies that support the benefits of regular screening by individuals and their physicians. Further, and equally important, we believe that the current grade and attendant information confuses men and boys about the importance of self-care and wellness and continues to inadvertently reinforce negative cultural attitudes. We believe that adjusting the rating to a Grade B is both warranted and necessary.

**Reasons to Update Recommendation Topic**

It has now been 14 years since the last full review, and recent studies, along with the accumulated weight of studies conducted since 2004, support a change of grade.

Supporting a review of the grade is the change in the way health care is delivered, or not delivered, in the United States. With the changes to the health-care delivery system under the Affordable Care Act (ACA) and subsequent health-care structural changes, it is more important than ever that men of all ages learn about their bodies and learn to perform basic screening to the extent possible. The ACA provides for a yearly wellness examination for women, but not for men. As a result, males are far less likely to have regular contact with a health-care provider who can educate them about general and male-specific health issues and self-care. (Men’s Health Network to Sylvia Burwell, Secretary, HHS, 2015) This lack of regular preventive care emphasizes the need for an initial physical examination at puberty coupled with instructions on how to conduct a TSE.

This lack of attention to male health issues is not a new problem, as explained by Westwood and Pinzon in Westwood and Pinzon (2008):

Although adolescent males have as many health issues and concerns as adolescent females, they are much less likely to be seen in a clinical setting. This is likely related to both individual factors and the health care system itself, which is not always encouraging and set up to provide comprehensive male health care.

An initial physical examination for adolescent males (Westwood & Pinzon, 2008) provides an excellent opportunity to catch early-stage abnormalities and developmental issues, while giving the health-care provider an opportunity to instruct the young man on TSE. It also provides a platform to engage in a discussion of the need for lifelong health and wellness.

Education on performing a TSE is readily available at several popular and well-referenced testicular cancer websites as well as numerous medical information websites. As men are likely to use the Internet before seeking a health-care provider, the ubiquitous nature of the information provides continuing support to the initial instruction provided to the young teen as well as adult male.

While a growing body of work illustrates the importance of TSE, the D rating discourages physicians from educating at-risk patients about testicular cancer and screening methods. It may also impede reimbursement for such wellness services by private payers. Because sexual health is a primary focus of men, their innate interest in this area drives them to an awareness of self and information related to sexual health that is publicly available. This lack of proactive consultation with a health provider creates a knowledge deficit that exacerbates anxiety in patients when testicular abnormalities manifest to them. The D grade might also discourage men who are known to be at high risk for testicular cancer from performing TSE.

Proper education on performing TSEs increases men’s confidence in their health, as TSE decreases anxiety with regular practice (Moul, 2007 and Friman & Finney, 1990). Teaching men to conduct TSE allows them to take increased responsibility for their own health.

TSE offers benefits beyond catching early-stage testicular cancer and can detect many noncancerous testicular/scrotal abnormalities. These abnormalities including varicocele, hydrocele, epididymitis, and orchitis threaten long-term morbidity if left undiagnosed, just as testicular cancer does.

Rating TSE a Grade B will encourage physicians to promote methods that allow patients to detect testicular abnormalities and cancer as early as possible.

Rating professional examination a Grade B will also allow patients to receive professional screening and proper instruction on monitoring their own health. TSE should be explained to patients, including those who are at the greatest risk for developing cancer, such as those with testicular microlithiasis, cryptorchidism, and infertility.

**Harm Associated With Testicular Examinations: Clinical and TSEs**

There is no identifiable harm associated with either clinical examinations or self-examinations. The expectation of “anxiety” sometimes associated with TSE is addressed by Friman and Finney (1990) and should not be an issue.
with comprehensive instruction associated with an initial young teen developmental examination (Westwood & Pinzon, 2008).

**Harm Associated With No Testicular Examinations: Clinical and TSEs**

These include the failure to identify various developmental issues at an initial young teen examination (Westwood & Pinzon, 2008), the failure to identify problems that may lead to infertility, and the failure to identify testicular cancer at an early stage when it can be treated most effectively.

Studies in the United States and others indicate that failure to identify testicular abnormalities, including cancer, at an early stage results in more radical and expensive treatments, a decrease in the quality of life, adverse psychological effects, in particular, anxiety, and higher mortality.

Not encouraging TSE reinforces in boys and men the sociocultural bias to defer active participation in self-directed and self-initiated health and wellness behaviors.

**Research That Supports Clinical Examinations and TSEs**

There are numerous current and historical studies in the global medical and public health literature that overwhelmingly support TSE. While some of these studies were conducted in other countries, including some countries with minimal access to health care, they are relevant to men in the United States and illustrate the effectiveness of identifying abnormalities, including testicular cancer, at an early stage. Despite the existence of a wealth of health-care options in the United States, men are disadvantaged in that there are no provisions for an initial developmental examination of young males and no annual wellness visit for men under the age of 65 years (those not on Medicare). With no provision for a regular physical examination, it is most important that males learn about their bodies and be advised to seek medical care if they suspect any significant change.

1) Michael Westwood, MB ChB MRCP(UK) FRCP1 and Jorge Pinzon, MD FRCP2

Adolescent male health. Pediatric Child Health. 2008 Jan; 13(1), 31–36. PMCID: PMC2528816. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2528816/

The authors of this study provide a list of developmental issues that should be addressed during a clinical examination of the adolescent male and emphasize the opportunity for health education.

Although this is generally a physically and emotionally healthy group, there are significant health care issues involving puberty, sexual health, risk behaviors, substance use and mental health. These issues present challenges to the physician, but also important opportunities to connect with young men, teach them about how their bodies work, reduce the incidence of risky behaviors, and intervene early in young men with psychosocial problems such as mood, body image or substance use problems.

At the teen health clinic of the Montreal Children’s Hospital (Montreal, Quebec) (personal communication), 85% to 90% of adolescents are female.

2) Aberger, M., Wilson, B., Holzbeierlein, J. M., Griebling, T. L., & Nangia, A. K. (2014). Testicular self-examination and testicular cancer: A cost-utility analysis. Cancer Medicine, 3(6), 1629–1634. http://doi.org/10.1002/cam4.318

This clinical and economic study illustrates the treatment outcome value of early detection. While the focus is on cost in the clinical setting, increased cost is a reflection of the extent of the disease, with significant physical and psychological implications due to delayed diagnosis.

The lesson from this study is that detection and diagnosis delay results in expensive treatment, which is a by-product of radical measures taken to treat a condition that could have been treated more efficiently and with much less pain and danger to the patient if detected early.

Data from SEER indicate that of the 8000 new testicular cancers diagnosed in 2013, ~12% presented with advanced/distant metastatic disease. Delays in diagnosis can dramatically impact survival with 5-year median relative survivals dropping from 99% for cancer confined to the testis to 74% for metastatic disease [1]. Moul et al. demonstrated a decrease in survival for germ cell tumors with greater than 16 weeks of delay in diagnosis [15]. Diagnostic delays are a well-recognized source of morbidity with a heavier burden of treatment and increased risk of later cardiovascular disease, pulmonary toxicity, and infertility.

It is important to remember that TSE is free and some false-positive findings have a possible significance, for example, varicocele with testicular atrophy, infertility, and/or pain.

Testicular cancer is not preventable and is generally very treatable as acknowledged by the USPSTF; but has significant morbidity and mortality despite this if detected late. Care of advanced disease is always going to cost more medically, psychologically, and financially than localized disease and it is important to reduce this cost, morbidity, and mortality through early detection and treatment.
3) Price, N. R., Charlton, A., Simango, I., & Smith, G. H. H. (2014). Testicular microlithiasis: The importance of self-examination. *Journal of Paediatrics and Child Health, 50*(10), E102.

http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1754.2011.02021.x/abstract

This Australian case study and literature review emphasizes the value of TSE in general pediatric practice.

*As with all adolescents, it is important to ensure that the patient and his parents understand the value of regular testicular self-examination and that they are instructed to seek medical review if a testis lump is detected.*

*Our case demonstrates the success of testicular self-examination and, equally important, timely presentation when a mass is detected.*

*Self-examination is the most important factor in the early detection of testicular malignancy.*

4) Kasaean, A. A. (2009). 105: Varicocele diagnostic accuracy with testicular self examination in 15-25 years old man. *Journal of Men’s Health, 6254.* Doi:20.2026/j.jomh.2009.08.103

http://www.europeanurology.com/article/S1875-6867(09)00181-X/abstract

This study from Iran, while small in number, found significant positive accuracy in varicocele diagnosis by TSE that, in part, addresses concerns about patient ability to engage in this practice appropriately. This paper also cites additional other studies that complement its findings.

In this study, the accuracy of varicocele diagnosis by self-examination after patients reviewed guidelines was 67.6%. ... Haggerty reported that testicular self-examination is the most efficient method for early detection of scrotal disease.

*In conclusion, testicular self-examination in adolescent and adults men should be routinely done for early diagnosis of testicular diseases especially varicocele. The authors recommend all young men receive a testicular examination as part of their general physical examination and be educated about varicocele.*

5) Öztürk, C., Fleer, J., Hoekstra, H. J., & Hoekstra-Weebers, J. M. (2015). Delay in diagnosis of testicular cancer; A need for awareness programs. *Plos ONE, 10*(11), 1–10. Doi:10.1371/journal.pone.0141244

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0141244

This review from the Netherlands emphasized the need for patient education and disease awareness programs that include TSE. The authors note that delay in recognition of testicular mass was associated with advanced testicular cancer stages ($p = .01$). They also note that delay in self-examination is also statically associated with men of lower educational level and levels of embarrassment about discussing testicular health.

*Patient delay and TC tumor stage were associated ($p = .01$). Lower educated men and men embarrassed about their scrotal change reported longer patient delay.*

The authors note that the medical “Literature remains indistinct about the exact relevance of testicular self-examination (TSE). The present study seem to support the view that men do not fail to detect scrotal changes but fail to act adequately upon it. Nevertheless, researchers have pleaded for health education in young men to increase TC knowledge and raise awareness of the normal shape and feel of testicles, because it may encourage men to act upon scrotal changes more adequately.

6) Parenti, G., Giorgi, U., & Albello, F. (2014). Testicular microlithiasis and testicular germ cell tumors: A seven year retrospective study. *Andrology-Open Access, 3*(1). doi:10.4172/2167-0250.100011

https://www.omicsonline.org/open-access/testicular-microlithiasis-and-testicular-germ-cell-tumors-a-seven-year-retrospective-study-2167-0250-3-115.php?aid=24994

A retrospective study of 7,320 male patients found evidence that testicular mass had a high correlation as a risk factor for testicular cancer. The authors also note that regular TSE is an important tool in evaluating progression of testicular mass between radiographic examinations.

7) Moul, J. W. (2007). Timely diagnosis of testicular cancer. *Urol Clin North Am.* 2007 May; 34(2), 109–17.

https://pdfs.semanticscholar.org/e90c/07db0cc575d1858b334223e47d16a446fd93.pdf

This evaluative review article addresses the benefits of early testicular cancer diagnosis and the value of TSE for its early detection.

*The potentially higher morbidity associated with the more intensive therapy that is required to salvage patients as a consequence of delay must not be underestimated. Efforts to decrease delay in diagnosis may be the most cost-effective method to improve further the survival of testicular cancer patients and to lessen treatment morbidity.*

Some have argued that the yield does not offset the increased anxiety that emphasis on TSE causes among men in an age group that already has many bodily concerns. Conversely, Friman and Finney point out that TSE
would not cause excess anxiety but would reduce anxiety with regular practice. Furthermore, teaching young men to conduct TSE may result in these men taking increased responsibility for their own healthcare.

Self-screening by TSE may be effective, especially for patients at risk for testicular cancer; although educational efforts must also include and convey the potential value to the individual of such behavior. Awareness of testicular cancer and its signs and symptoms is abysmally poor in young men and undoubtedly contributes to the continued problem of delay in diagnosis. At a minimum, physicians must promote awareness so that men report to their physicians at the first sign or symptom of testicular pathology. The author also advocates for the importance of patient education as well as education among other health care providers.

8) Eric Huyghe, Audrey Muller, Roger Mieusset, Louis Bujan, Jean-Marc Bachaud, Christine Chevreau, Pierre Plante, Patrick Thonneau

Impact of Diagnostic Delay in Testis Cancer: Results of a Large Population-Based Study
DOI: http://dx.doi.org/10.1016/j.euro.2007.06.003. December 2007 Volume 52, Issue 6, Pages 1710–1716.
http://www.europeanurology.com/article/S0302-2838(07)00780-4/fulltext

This is a review article that demonstrates how diagnostic delay of testicular cancer has a significant adverse impact on the 5-year survival rate. It suggests that urologists should program to enhance awareness and knowledge of testis cancer, so the diagnosis can be made more rapidly.

9) Phillipo L Chalya author, Samson Simbila and Peter F Rambau

Ten-year experience with testicular cancer at a tertiary care hospital in a resource-limited setting: a single centre experience in Tanzania
World Journal of Surgical Oncology 201412:356
https://doi.org/10.1186/1477-7819-12-356© Chalya et al.; licensee BioMed Central Ltd. 2014.
https://wjso.biomedcentral.com/articles/10.1186/1477-7819-12-356

The authors of this study reference the lack of critical resources in the country, but emphasize that the stage of the cancer at diagnosis is of prime importance and that patient education and TSE are key to identifying the cancer at an early stage.

The main predictors of mortality (P < 0.001) were patient’s age (> 65 years), late presentation (> 6 months), stage of disease, and presence of metastasis at time of diagnosis. The mean follow-up period was 22 months. At the end of five years, only 18 (37.5%) patients were available for follow-up and the overall 5-year survival rate was 22.2%. The main predictors of 5-year survival rate (P < 0.001) were patients’ age, stage of disease, and presence of lymph node and distant metastases.

Conclusions: Testicular cancer, although rare in Tanzania and Bugando Medical Centre in particular, poses a great challenge in the management of this disease. Late presentation, high-stage disease at presentation, poor accessibility to healthcare facilities, lack of diagnostic and staging facilities, absence of radiotherapy facilities in northwestern Tanzania, non-adherence to adjuvant therapy, high costs of newly recommended drugs, and lack of patient awareness of testicular self-examination are major challenges in the care of these patients. To address these challenges, we recommend that the public receive education regarding the importance of early presentation to health facilities and follow-up following treatment, a significant increase in health care funding, expansion of the health insurance scheme to cover cancer treatment, and improved patient education. The inclusion of teaching testicular self-examination in the primary and secondary school curriculum is also proposed as a preventive strategy.

10) Serife Zehra Akar Hatice Bebis

Evaluation of the effectiveness of testicular cancer and testicular self-examination training for patient care personnel: intervention study
Health Education Research, Volume 29, Issue 6, 1 December 2014, Pages 966–976, https://doi.org/10.1093/her/cyu055
Published: 23 September 2014
https://academic.oup.com/her/article/29/6/966/2804324

This Turkish study examines the effectiveness of two different methods of teaching testicular cancer awareness and TSE.

The known risk factors for TC include cryptorchidism (undescended testicle) and a family history of TC. Therefore, early detection is important for successful treatment. More than 90% of men with TC present with scrotal symptoms. Males who find a lump in its early stages frequently have a better prognosis, with 5-year survival rates >95%. However, men usually delay seeking treatment for TC for an average of 16 weeks after symptoms develop because of the failure to recognize the significance of their symptoms, embarrassment, lack of time, fear of cancer and fear of death. Therefore, regular testicular self-examination (TSE) has been recommended for early detection of TC by the American Cancer Society. Furthermore, the European Association of Urology 2011 guidelines on TC recommend clinical examination of individuals who have clinical risk factors, and patient-oriented organizations also recommend routine self-examination.
11) Friman, P., & Finney, J. (1990). Health education for testicular cancer. *Health Education Quarterly, 17*(1), 443–453.

First Published December 1, 1990. http://journals.sagepub.com/doi/abs/10.1177/109019819001700408

The authors look at potential controversy about any “anxiety” that may be associated with TSE and ways to mitigate it while emphasizing the importance of early detection and treatment.

At least two issues could mitigate the controversy [however]. First, that self-examination causes excess anxiety has not been established and it seems just as possible regular practice of TSE could reduce anxiety. Second, teaching young men to conduct regular TSE may result in them taking increased responsibility for their own health care. Health care professionals lament the apparent lack of concern that young men, particularly adolescents, have for their own health. Concern for health, however, may be as much a result of practicing health behavior as it is a cause of such practices. If so, increased practices such as TSE could lead to increased health concern in the population most at risk for testicular cancer.

Friman and Finney conclude that early detection and treatment of testicular cancer can reduce its morbidity and mortality and yet it has been all but ignored by health education researchers. Early detection will not prevent testicular cancer but it can lead to early treatment and thereby prevent the cancer from reaching advanced stages. This last is significant because the cure rate associated with early treatment of testicular cancer is nearing 100%. Quite simply, early detection of testicular cancer is an appropriate target for health education efforts because it will prevent lives and potential productive years of life from being lost to a curable disease.

12) Michael J. Rovito, PhD, CHES, FMHI, James E. Leone, PhD, MPH, MS, ATC, CSCS, CHES, FMHI, Chase T. Cavayero, OMSII, FMHI

“Off-Label” Usage of Testicular Self-Examination (TSE) Benefits Beyond Cancer Detection

First Published May 19, 2015
http://journals.sagepub.com/doi/abs/10.1177/155798315584942

This article describes the overall value in the use of TSE to help identify testicular cancer and other abnormalities at an early stage.

TSE can serve as a tool not just for detection of testicular cancer, but other male-specific urogenital health concerns, including varicoceles, hydroceles, among others. Furthermore, we suggest that TSE can also help foster informed decision-making skills among males with regard to health concerns and treatment options.

This article offers an overview of the debate over TSE’s purpose and net benefit. We conclude that TSE is a behavior that is beneficial beyond detecting cancer. These proposed “off-label” uses of the procedure make for an effectual means to promote testicular health, self-awareness, and wellness among males.

Some Significant Recommendations From the Medical Community

A review of recommendations by the medical community at large is generally supportive of TSE and clinical examinations as valid tools for the early and potentially life-saving detection of nonpreventable testicular cancer in the targeted population. A few such examples follow:

- American Cancer Society (ACS) (Retrieved December 2017):

  https://www.cancer.org/cancer/testicular-cancer/detection-diagnosis-staging/detection.html

  While acknowledging the Task Force grade for TSE, the American Cancer Society (ACS) recommends that a testicular examination be part of a routine examination:

  “Most doctors agree that examining a man’s testicles should be part of a general physical examination. The American Cancer Society (ACS) recommends a testicular examination as part of a routine cancer-related checkup.”

  And it recognizes the benefits of TSE by stating

  The ACS advises men to be aware of testicular cancer and to see a doctor right away if they find a lump in a testicle. Because regular testicular self-examinations have not been studied enough to show they reduce the death rate from this cancer, the ACS does not have a recommendation on regular testicular self-examinations for all men. However, some doctors recommend that all men examine their testicles monthly after puberty.

- Harvard Medical School (Retrieved December 2017):

  https://www.health.harvard.edu/newsletter_article/Screening_for_cancer_Testicular_and_prostate_cancer

  Harvard Medical School recommends TSE while emphasizing the treatment benefits of identifying testicular cancer at an early stage. The Medical School also addresses fears associated with TSE, the fear that one might find cancer, reminding readers to consult their health-care provider if they suspect an abnormality.

  Doctors can cure testicular cancer even if it is widespread; the cycling champion Lance Armstrong is the poster boy for modern chemotherapy. Still, treatment is much easier if the disease is detected early. An imaging procedure, testicular ultrasound, is an excellent
way to spot the disease, but it’s not necessary unless there is a specific reason to worry about it. Doctors should screen young men by performing a testicular examination at each checkup. And men between the ages of 15 and 35 should screen themselves on a regular basis, as follows . . .

Self-examination (right): Men between the ages of 15 and 35 should examine themselves about once a month, preferably after a warm shower or bath, when the scrotum is relaxed.

The fear of cancer deters many young men from simple testicular self-examination. It shouldn’t; Lance Armstrong can remind men that they can all be winners if they recognize their opponent.

Conclusion

Based on a review of recent global medical literature and medical organization opinion, the USPSTF recommendation of a Grade D for TSE is inappropriate. The primary concern for harm raised by the task force, anxiety, may be overcome with reinforcing proper guidelines for TSE, overall patient education about the success rate in treating early-detected testicular cancers, and making this examination a routine part of adolescent and adult male overall health and wellness self-care and engagement. Indeed, some experts believe that helping men properly engage in TSE will allay anxiety, whereas relegating TSE to be outside of recommended guidelines increases anxiety about the condition. Since testicular cancer is generally not considered preventable, the anxiety a patient may suffer with a diagnosis of testicular cancer in later stages after learning that a simple TSE and provider examination may have made for an easier and more successful clinical course is far greater than addressing the risk of minimal anxiety about TSE and regular testicular examinations.

We call on the USPSTF to engage an expert panel of appropriate outside experts, including those cited here, to expeditiously review the current recommendations for testicular self-examinations and testicular examinations in a clinical setting. Our position is that a Grade of B for both clinical examinations and self-examinations is more appropriate based on current literature, expert opinion, and public health need.

Declaration of Conflicting Interests

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References

Brott A., Dougherty A., Williams S.T., Matope J.H., Fadich A., Taddelle M. (2011). The economic burden shouldered by public and private entities as a consequence of health disparities between men and women. American Journal of Men’s Health, 5(6), 528–539.

Haggerty BJ. Prevention and differential of scrotal cancer. Nurse Pract 1983;8(10):45, 48, 50.

Men’s Health Network to Sylvia Burwell, Secretary, HHS. (2015). Comments on office of civil rights, ACA nondiscrimination proposed rule. Retrieved from http://www.menshealthnetwork.org/library/ACA-MHN-discrimination-comments-110915.pdf

Westwood, M., & Pinzon, J. (2008). Adolescent male health. Paediatrics & Child Health, 13(1), 31–36.