Supplementary file Guideline process

Composition of the guideline working group

Working group

- Dr. R.J. de Vos (chairman), sports medicine physician, department of orthopaedics and sports medicine, Erasmus MC, University Medical Centre, Rotterdam; Dutch Association of sports medicine (VSG)
- Prof. J. Zwerver, professor of sports medicine, University Medical Center Groningen and sports medicine physician, Hospital Gelderse Vallei, Ede; Dutch Association of sports medicine (VSG)
- Dr. D.E. Meuffels, orthopaedic surgeon, department of orthopaedics and sports medicine, Erasmus MC, University Medical Centre, Rotterdam; Dutch Orthopaedic Association (NOV)
- F.F. Smithuis, musculoskeletal radiologist, department of radiology & nuclear medicine, Amsterdam UMC, Amsterdam; Dutch Association for Radiology (NVvR)
- R.D. van Ingen, general practitioner, sub specialty musculoskeletal medicine, General Practice Van Ingen - Breugem, Apeldoorn; Dutch General Practitioners Association (NHG)
- Dr. F.J. van der Giesen, physician assistant Rheumatology, Department of Rheumatology Leiden University Medical Center; Dutch Health Professionals in Rheumatology (NHPR)
- E. Visser, Sports Physiotherapist/Master Manual Therapist, Sports Medicine Rotterdam; Royal Netherlands Society for Physiotherapy (KNGF) and Dutch Association for Sports Physiotherapy (NVFS)

Sounding board group

- Dutch Association for Rheumatology
- Dutch Association of Surgery
- Dutch Association of Rehabilitation Physicians
- Dutch Association for Occupational and Occupational Medicine
- Dutch Association of Podiatrists
- Dutch Society for Sports Massage
- Dutch Insurance Medicine Association
- Dutch Patient Federation
- Royal Dutch Athletics Union

With the cooperation of

- A.C. van der Vlist (coordinator guideline development), PhD candidate department of orthopaedics and sports medicine, Erasmus MC, University Medical Centre, Rotterdam

<u>With support from</u>

- Dr. A.C.J. Balemans, consultant, Knowledge Institute of the Federation of Medical Specialists. As of March 2019
- Dr. M.A. Pols, senior advisor, Knowledge Institute of the Federation of Medical Specialists. As of March 2019
- Dr. N. van Veen, consultant, Knowledge Institute of the Federation of Medical Specialists. Until March 2019
- Dr. M. den Ouden, policy officer, Dutch Sports Medicine Association (VSG). Consultant, Federation of Medical Specialists, Utrecht, the Netherlands

<u>Courtesy of</u>

- Dr. M. Winters, physiotherapist and clinical epidemiologist, Centre for General Practice, Aalborg University, Denmark.

- Dr. A. Weir, sports doctor, department of orthopaedics and sports medicine, Erasmus MC University Medical Center, Rotterdam.
- Dr. C. Ardern, senior wetenschappelijk onderzoeker, Division of Physiotherapy, Karolinska Institute, Zweden.
- Prof. N.J. Welton, Professor of Population Health Sciences, University of Bristol, United Kingdom.
- Dr. D.M. Caldwell, senior scientific researcher Population Health Sciences, University of Bristol, United Kingdom.
- W. Bramer, biomedical information specialist, Erasmus MC, University Medical Centre, Rotterdam

Accountability and process

Methodology guideline development

Validity

By 2025 at the latest, the board of the Dutch Association of Sports Medicine (VSG) will determine whether this guideline and the individual modules are still up to date. Where necessary, a new working group shall be set up for the revision of the guideline or specific modules. During drafting, the working group assessed the maximum period at which reassessment should take place per module. In a number of cases, points of interest have been formulated which are important in a future review. The guideline's validity could be affected if new developments lead to a revision.

The VSG was the association that led this guideline process and is primarily responsible for assessing its actuality. The other scientific associations participating share the responsibility and inform the VSG about relevant developments in their field.

Initiative

The Dutch Association of Sports Medicine (VSG)

Authorisation

This guideline is authorised by the: Dutch Association for Sports Medicine (VSG), Dutch Orthopaedic Association, Dutch Association for Radiology, Royal Netherlands Society for Physiotherapy, Dutch Health Professionals in Rheumatology and Dutch Patient Federation. The Dutch General Practitioners Association granted organisational authorisation.

General data

Guideline development (project management and literature review) was supported by the Knowledge Institute of the Federation of Medical Specialists (www.kennisinstituut.nl) and was funded by the Quality Foundation of the Dutch Foundation for Medical Specialists (SKMS).

In this guideline, reference is made to the previous 2007 guideline 'Chronic Achilles tendinopathy, in particular tendinosis, in athletes'. This old guideline is available via the VSG and referred to in the text as the: Previous Dutch multidisciplinary chronic Achilles tendinopathy guideline (2007).
The current guideline was initially set up to be a renewal. However, the scope, methodology, clinical challenges and current scientific knowledge are so large that this current 2020 guideline can be regarded as a new guideline rather than an update.

Working group composition

A multidisciplinary working group was set up to update the 2007 guideline, consisting of representatives of relevant specialties involved in the care of Achilles tendinopathy. This guideline revision has been reassessed due to progressive understanding of this condition and changes in the healthcare landscape. This led to reassessment of the composition of the guideline working group and more invited representatives of other relevant specialties for this guideline.

The working group members were all mandated to participate by their professional associations. The working group worked for three years on the process and drafting. The working group is responsible for the complete text of this guideline.

Conflict of interests
The Royal Dutch Medical Association (KNMG) Code "Code for preventing improper influence by conflict of interest" has been followed (Royal Netherlands Academy of Arts and Sciences, 2016). All working group members have stated orally and in writing whether they have had direct or indirect (financial) interests related to the subject of the guideline in the last 5 years. An overview of the potential conflicts of interests all working group members is shown in Table 1.

Patient perspective
In drawing up and developing this guideline, attention was paid to the patient perspective by a delegation from the Netherlands Patient Federation. Through this organisation, an online questionnaire was set out to gain more knowledge about the current care process for patients with Achilles tendinopathy, the aims they have and the challenges they experience. This draft guideline was also submitted to the Dutch Patient Federation for commentary.

Implementation
Guideline implementation and the individual modules have been taken into account at the various stages of development. The practicality of the recommendations was also taken into account. Factors have been taken into account which may promote or hinder the introduction in clinical practice.

Method
AGREE
This guideline was created in accordance with the requirements set out in the Medical Specialist Guidelines 2.0 report of the Advisory Committee on Guideline Development of the Federation of Medical Specialists. This report is based on the AGREE II instrument[1], which is an internationally widely accepted instrument. For a detailed description of the creation of an evidence-based guideline, we refer to the step-by-step guide Development of Clinical Practice Guidelines for Medical Specialists (2015) of the Knowledge Institute of the Federation of Medical Specialist.

Analysis for challenges in practice
During the preparatory phase, the chairman of the working group and the coordinator proposed key issues the guideline should address. In an Invitational conference these issues were discussed with the following associations: The Dutch Association for Sports Medicine, the Dutch Orthopaedic Society, the Dutch Association for Radiology, the Dutch General Practitioners Association, Dutch Health Professionals in Rheumatology, The Royal Netherlands Society for Physiotherapy and the Dutch Association for Sports Physiotherapy, Dutch Association of Podiatrists and Dutch Patient Federation.

Surname	Main occupation	Other positions	Personal financial interests	Personal relationships	External research funding	Intellectual property	Other potential conflicts of interest	Signed on	*Action?*
Zwerver	Professor sports medicine UMCG/ sports medicine physician SportsValley	Educational activities in the field of tendinopathy (freelance)	No conflicts of interest	No conflicts of interest	None	None	Firm UTC Imaging paid for 2 visits to international conferences	12-10-2018	None needed
Smithuis	MSK radiologist AUMC	Education in het AMC students, registrars and consultants	No conflicts of interest	No conflicts of interest	None	None	None	13-11-2018	None needed
Meuffels	Orthopaedic surgeon and trauma surgeon Erasmus MC	Staff member Rijndam Revalidatie Centrum Rotterdam; Consultant to Feyenoord, Excelsior, Sparta; t Scapino Ballet, Conny Jansen Danst; Chair Sportorthopedie van NOV; teacher Rotterdam Hogeschool, Breederoode Hogeschool	No conflicts of interest	No conflicts of interest	No conflicts of interest	No conflicts of interest	No conflicts of interest	22-11-2018	None needed

Visser	Sports physiotherapist and manual therapist:Sportgeneeskunde Rotterdam,; Owner E. Visser Sportfysiotherapie working for Scapino Ballet, ABN AMRO WTT, Hogeschool Rotterdam (teaching) ErasmusMC (research)	Multidisciplinary clinic EMC, part of Fit to Perform research project	No conflicts of interest	No conflicts of interest	No conflicts of interest	It is my opinion that working together with other experts on projects such as this will lead to an increased intellectual property. Whether this leads to conflicts of interest is very hard to decide. By publishing guidelines this increases ones profile and publicity. As far as I can discern this would not affect the future.	No conflicts of interest	21-11-2018	None needed

van der Giesen	Physician assistant rheumatology, LUMC	Teacher training for hand therapy-Erasmus MC Rotterdam and Teacher training for hand therapy, Nederlands Paramedisch Instituut	No conflicts of interest	No conflicts of interest	No conflicts of interest	No conflicts of interest	No conflicts of interest	27-11-2018	None needed
Van Ingen	General practitioner – own practice	Member of steering committee GP training Erasmus Universiteit (paid) teacher GP training MSK Erasmus university (Paid) MSK specialisation	No conflicts of interest	No conflicts of interest	No conflicts of interest	No conflicts of interest	No conflicts of interest	27-12-2018	None needed

*** De Vos**	Sports medicine physician and scientific researcher Erasmus MC	Team doctor SBV Excelsior	No conflicts of interest	No conflicts of interest	Scientific research projects with funding from: ReumaNederland, Annafonds, ZonMw, Maria Sklodowska-Curie, GE Healthcare + National Basketball Association (NBA). These funding bodies do not have any potential gains from these guidelines	One of my personal motivations to work on this guideline is to improve my scientific knowledge and further improve my profile. This could lead to improved recognition amongst health care providers. This would not affect the results of the guideline.	No conflicts of interest	13-12-2018	None needed

Table 1 – An overview of the potential conflicts of interests all working group members. * denotes the chairman of the guideline.

Clinical questions and outcome measures

On the basis of the discussion of the key issues, the chairman and the coordinator drew up scoping questions. These were discussed with the working group and a final selection of scoping questions was made. The scoping questions were divided into sub-modules with search questions or into sub-questions. For each question, the working group discussed patient important outcome measures, taking into account the results of the survey carried out by the Dutch Patient Federation.

The working group then decided which outcome measures were considered primary (critical for decision-making) or secondary. The working group also defined - where possible - for the primary outcome measures which differences could be considered clinically important. This clinically important difference can be translated as a difference that can also be identified as an important change for the patient. These clinically important differences were based as far as possible on existing scientific literature.

Literature searching and selection

The search strategy was conducted in several ways. There was an exploratory search for existing national and international guidelines and for systematic reviews. Subsequently, a specific search was based on published scientific studies in (multiple) electronic databases for the individual questions. Further studies were also sought on the basis of the references in the selected articles. This search strategy was developed in collaboration with a biomedical information specialist. Initially, studies with the highest level of evidence were sought. The working group members selected the articles found through the search based on pre-established selection criteria. The selected articles were used to answer the questions. The databases searched, the search strategy and the selection criteria used can be found in each individual (sub)module.

Quality assessment of individual studies

Individual studies were assessed in a systematic manner. This was done on the basis of established methodological quality criteria, in order to assess the risk of bias. These assessments are visible per individual (sub)module in the Risk of bias (ROB) tables.

Literature summaries

The relevant data from all selected articles in the individual modules are clearly displayed in the evidence tables. The main scientific findings are described in the summary of the literature. If the number of studies was sufficient and there was acceptable similarity between the studies (homogeneity), the data were also quantitatively summarised (meta-analysis). In addition, an attempt was made to be able to compare individual treatments in a network (network meta-analysis).

Assessing the power of scientific evidence

The strength of the scientific evidence was determined using the GRADE method. GRADE stands for 'Grading Recommendations Assessment, Development and Evaluation' (see http://www.gradeworkinggroup.org/).

GRADE distinguishes 4 degrees for the quality of the scientific evidence: high, moderate, low and very low (Table 2). These ratings refer to the degree of certainty that exists about the conclusion based on the scientific literature.[2] Several GRADE classification systems have been used because prognosis-oriented questions are different from questions focused on treatment effectiveness. In addition, a separate GRADE-classification is used when applying a network meta-analysis.[3]

GRADE	Definition
High	• We are very confident that the true effect lies close to that of the estimate of the effect. • It is highly unlikely that the conclusions will be altered if new large studies are added the literature analysis
Moderate	• We are moderately confident in the effect estimate; the true effect is likely to be close to the estimate of the effect • It is possible that the conclusion could change if the results of new large studies are added to the literature analysis.
Low	• Our confidence in the effect estimate is limited the true effect may be substantially different from the estimate of the effect • There is a real chance that the conclusion will change if the results of new large studies are added to the literature analysis.
Very low	• We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of the effect • The conclusion of the literature analysis is uncertain

Table 2 – GRADE classification

When grading the power of scientific evidence according to the GRADE methodology, it is important to define limits of clinical relevance that influence final decision-making.[4] Exceeding these limits may give a stronger reason for changing the recommendation. The limits for clinical decision-making are based on the minimum clinically important difference (MCID). However, clinical decision-making should always be assessed from a clinical perspective. For example, in the assessment of a simple and inexpensive intervention that has no significant disadvantages, it can be accepted that the effectiveness of the intervention in question is below the MCID threshold.[4]

Formulating the conclusions

For each relevant outcome measure, the scientific evidence is summarised in one or more conclusions. The classification of the evidence is incorporated in the formulation of these conclusions.

Considerations (from evidence to recommendation)

The considerations are the link between scientific evidence and the final recommendation. In this process, in addition to (the quality of) the scientific evidence, other important aspects are also taken into account. A number of important topics included in this weighting are: the values and preferences of the patient, the expertise of the working group members, safety, availability and health care costs. These aspects are listed per module and assessed under the heading 'Considerations'.

Formulating recommendations

The recommendations answer the scoping question and sub-questions and are based on a combination of the available scientific evidence and the main considerations. The strength of the scientific evidence and the considerations together determine the strength of the recommendation. As a result, the strength of the scientific evidence alone is not decisive for the strength and direction of the recommendations. The strength of the recommendation is always determined by weighting of all relevant arguments.

Preconditions (Organisation of care)

The bottleneck and clinical challenges analysis and the development of the guideline have also taken the organisation of care into account. Aspects that are a precondition for the provision of care include: coordination, communication, (financial) resources, manpower and infrastructure. These preconditions are, where applicable, part of the considerations in a module.

Commentary and authorisation phase

The draft guideline was submitted to the relevant (scientific) associations and Dutch Patient Federation for commentary. In addition, the following associations and organisations were approached for comment: Side effects center Lareb, Healthcare Institute of the Netherlands, Independent Clinics Netherlands, the Dutch Federation of University Medical Centres, the Dutch Association of Hospitals, the Cooperation Top clinical Training Hospitals, Health Insurers Netherlands, Health Inspectorate health and youth, the Dutch Health Care Authority, Professional Association Nursing Nurses, Dutch Association Physicians and Runners world.

The comments were collected and discussed with the working group. Following the comments, the draft guideline was amended and definitively adopted by the working group. The final guideline was submitted to the participating (scientific) associations and (patient) organisations for authorisation and authorised by them.

REFERENCES

1. Brouwers MC, Kho ME, Browman GP, et al. AGREE II: advancing guideline development, reporting and evaluation in health care. CMAJ Canadian Medical Association Journal 2010; 182(18): E839-42.
2. Schünemann H, Brożek J, Guyatt G, et al. GRADE handbook for grading quality of evidence and strength of recommendations. The GRADE Working Group; 2013; Available from: guidelinedevelopment.org/handbook.
3. Guyatt GH, Oxman AD, Vist GE, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. BMJ 2008; 336(7650): 924-6.
4. Hultcrantz M, Rind D, Akl EA, et al. The GRADE Working Group clarifies the construct of certainty of evidence. J Clin Epidemiol 2017; 87: 4-13.