EVIDENCE-BASED PRACTICE DIETETICS

E. Vanhauwaert [1,2,4]
L. Verbeyst [1]
S. Peters [3]
C. Matthys [2,4]

[1] UC Leuven-Limburg, Health Innovation Centre of expertise, http://voeding.ucll.be
[2] KU Leuven, clinical and experimental endocrinology
[3] Ebpracticenet, www.ebpnet.be
[4] VBVD (Flemish Association of Dieticians), Evidence-Based Dietetics committee

Good health care requires **the application of the best scientific evidence available at the time for each patient,** which translates into evidence-based practice (EBP). This also applies for dieticians, the health care professionals best positioned with regard to nutrition. During the past few years, increasing importance has been attached to this and various initiatives have been taken to strengthen EBP dietetics.

SUMMARY

- Evidence-based practice (EBP) dietetics combines current scientific knowledge with dieticians' expertise and patients' input with an eye to achieving the best approach customised to the patients. In view of the dynamic nature of scientific research and social developments, it is important to regularly evaluate EBP guidelines.
- EBP dietetics applies for every aspect of a dietician's work (care, catering, production, health promotion).
- The majority of Belgian dieticians is convinced of the importance of EBP.
- Dieticians prefer short but clear guidelines with summarising key messages and the possibility of requesting additional information. This can help to further customise the application of the guideline to the patient.
- EBP guidelines for dieticians are bundled on the platform www.ebpnet.be, the reference platform for EBP for all Belgian care providers in primary health care. In addition, various projects are being set up to promote the implementation of clinical evidence-based dietary guidelines and the application of EBP dietetics.

Evidence-based practice (EBP) bundles together individual professional know-how and practical expertise (cornerstone 1) with the best external evidence available as a result of systematic research (cornerstone 2). In addition, EBP also takes into account the patients' situation, values and preferences and the available resources (cornerstone 3). This leads to shared decision making (1, 2). In other words, scientific knowledge is combined with dieticians' expertise and patients' input so that an intervention in everyday dietary practice can be customised to the patient (figure 1).

THE IMPORTANCE OF EVIDENCE-BASED PRACTICE

Evidence-based practice (EPB) in health care provides a substantiated motivation for the approach chosen. This improves the quality and efficiency of the care. What's more, EBP can help to determine the policy both at micro and at macro level, for example within the context of making choices about capacity provisions, methods and equipment to be used. The best approach and feasibility for the patient always take priority together. In Belgium, a federal plan and network were set up to coordinate and further implement EBP (3).

EVIDENCE-BASED PRACTICE IN 5 STEPS

Within evidence-based practice (EBP), a systematic, 5-step approach is used (see also the infographic: Evidence-based practice in 5 steps). This EBP method is suitable for all health care professions and in any field of a dietician's work (care, catering, production, health promotion). The sources to be consulted vary, depending on the domain. For example, to find the answer to which dietary interventions are suitable for integrating in community work for children between the ages of 9 and 12, databases must be consulted that provide more information about educational interventions. This article focuses on clinical sources.

STEP 1: DETERMINE A RESEARCH QUESTION

In step 1 of the approach, the problem or uncertainty is translated into an answerable question. The PICO method is a good tool to determine the right key words and establish a well-defined research question (6).

P - What problem and/or patient is concerned? E.g. an adult patient who is obese and has prediabetes and works in a varying shift system.

I - What is the intended intervention? E.g. a low-carbohydrate diet.

C - Which control intervention should be compared with? E.g. a standard diet to lose weight.

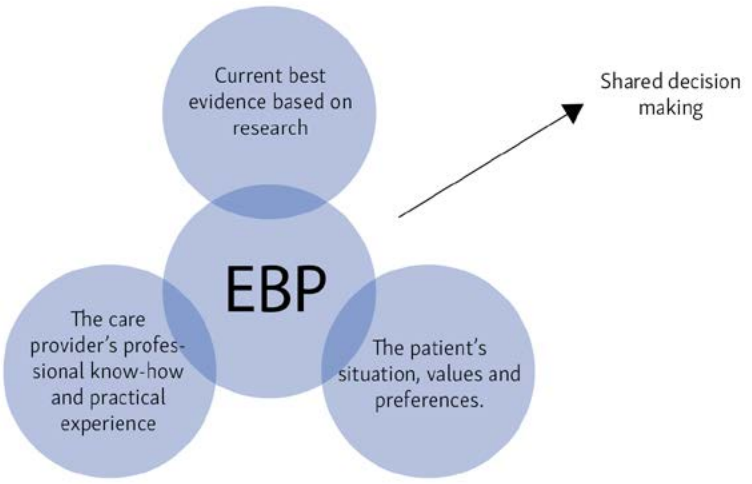
O - What is the desired outcome? E.g. losing weight and adopting a healthy lifestyle.

STEP 2: SEARCH FOR INFORMATION

Step 2 is looking for evidence. The Haynes pyramid – also known as the pyramid of evidence-based information resources – can help to search for information efficiently (7,12). The pyramid is divided into levels depending on the level of evidence (figure 2, see examples of sources in table 1). In practice, guidelines are first sought. They provide a state of affairs and bundle the latest evidence. Belgian guidelines or guidelines adapted to the Belgian context are preferable to foreign guidelines since they do not require adapting to the Belgian context for a health care organisation and units.

If there are no guidelines available, we move further down the pyramid and look for scientific articles, starting with systematic reviews.

FIGURE 1 - The three cornerstones of evidence-based practice (EBP) (redrawn based on 1, 2, 3, 4).



STEP 3: ASSESS THE QUALITY

In step 3, the information found is screened and its quality is assessed.

The quality of guidelines is assessed using the AGREE-2 instrument or the 'Agree global rating scale' (abbreviated form) (www.agreetrust.org), a validated instrument used internationally.

Each key message in a guideline is given a GRADE or score which immediately shows the strength of evidence of the key message or recommendation (weak or strong) on the basis of the pros versus the cons and the risks of the recommendation (8). A number is awarded, as is a letter. That depends on the quality of the studies. GRADE 1A is the highest score, GRADE 2C the lowest.

Various instruments have been developed to assess the quality of other sources. It is possible to consult lists of scores amongst others via https://belgium.cochrane.org/informatie-hulpmiddelen/tools-checklists.

STEP 4: IMPLEMENT THE EVIDENCE

In step 4, on the basis of the evidence available, a treatment is chosen taking into account the patients' situation, values and preferences (e.g. discussing a certain diet with the patient, taking his or her lifestyle and way of eating into account). The guidelines of www.ebpnet.be have been translated to make them understandable for patients on www.gezondheidenwetenschap.be.

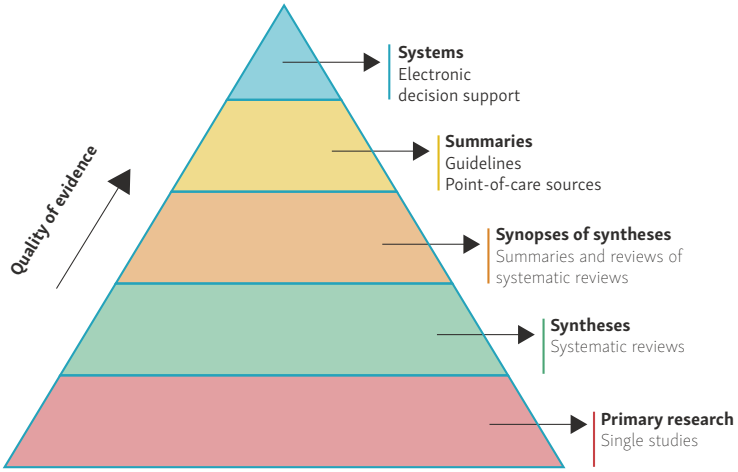
STEP 5: EVALUATE THE APPROACH

The aim of step 5 is to evaluate the quality of the approach on a regular basis. This is comparable to the check phase of the PDCA (plan do check act) cycle. The dietician checks whether the approach is effective for the patient and whether the goals drawn up in consultation with the patient have been achieved or not, and if not why not.

DO BELGIAN DIETICIANS ACT IN ACCORDANCE WITH EBP?

In February-March 2018, the UCLL (University College Leuven-Limburg) in cooperation with the VBVD (Flemish Association of Dieticians) and the UPDLF (French-speaking Belgian Association of Dieticians) held a national online survey amongst dieticians (9). The prior survey held amongst GPs, nurses, midwives and physiotherapists by the KCE (federal knowledge centre for health care) formed the basis and was expanded with questions specifically for dieticians (10).

FIGURE 2 - The Haynes pyramid or the pyramid of evidence-based information resources (12).



SECONDARY ASSESSED SOURCES	INTERPRETATION OR ANALYSIS OF DIFFERENT STUDIES ON A SPECIFIC TOPIC
Systems	Electronic decision-support systems for the best EBP, integrating scientific evidence with individual patient records. Such an integrated system is not yet available.
Summaries	Guidelines and point-of-care sources.
Synopses of syntheses	Brief (1 to 2 pages), structured summaries and critical appraisals of systematic reviews.
Syntheses	Systematic reviews (including meta-analyses).
PRIMARY SOURCES	**THE BUILDING BLOCKS OF CLINICAL DECISION-MAKING AND THE ABOVE SECONDARY EVIDENCE**
Single studies	E.g. clinical research (RCTs), observational research, case reports.

OVERVIEW OF THE MAIN SCIENTIFIC SOURCES FOR EVIDENCE-BASED PRACTICE IN HEALTH CARE.

The survey was completed by 151 (student) dieticians, 114 of whom were active as dieticians.
The majority of the dieticians (85%) are convinced to very convinced of the importance of EBP and over half (55%) consults literature every week. In case of questions, above all colleagues are consulted, but also manuals, scientific journals and online databases. The majority (74%) are familiar with dietary guidelines; 11% have never heard of them (9).

WHERE DOES THE PROBLEM LIE FOR EBP?

These are the main bottlenecks (9):

- The information is fragmented. This makes it time-consuming to look for information and it is impossible to be and remain abreast of everything.
- Access to EB sources is limited (cost price, language as a barrier).
- One third of the respondents who are familiar with guidelines indicate that there are too few guidelines available.
- There is insufficient knowledge of scientific databases and concepts.

WHAT DO DIETICIANS THINK ABOUT THE APPLICATION OF EBP?

The previously mentioned survey in 2018 also showed a number of elements to promote the use of high-quality guidelines, for example adaptations to the Belgian context, use of clear language and availability in the own language (9).
As a follow-up, an in-depth, high-quality survey was carried out in 2019. Six dieticians with years of work experience in primary health care, home care or a hospital setting were interviewed about the content and use of clinical dietary guidelines (11). This showed that they want guidelines to contain the following elements:

- a summary of the key messages;
- a clear and concrete presentation of the theoretical and practical nutritional recommendations and the approach to the treatment; a short and clear guideline is preferred over a very extensive guideline; it must be possible search for information quickly and view it at a glance;
- the possibility of requesting additional information, for example about the diagnosis, the pathology, daily menus, product lists and visual supporting material via annexes or relevant links or references in the text. This can help to further customise a guideline to the patient.

POSSIBLE SOLUTIONS FOR MORE EBP

The first and most important solution put forward by the dieticians surveyed is to bundle all the information in one place. This can increase the information on offer and access to that information which means that dieticians have to spend less time searching. This demand has already been met, since dieticians are one of the ten care professions that are actively supported by Ebpracticenet (www.ebpnet.be). The primary health care platform is currently being expanded with information for dieticians. Thanks to this multidisciplinary platform, the information can also be consulted by other care professions and guidelines are increasingly being drafted in a multidisciplinary way. In addition, at present there is a national project (financed by Ebpracticenet) by the UCLL, in cooperation with the VBVD, the UPDLF and an accompanying steering group consisting of various organisations and hospitals, to promote the implementation of clinical evidence-based dietary guidelines. Four toolkits about nutrition in case of diabetes type 2, cardiovascular diseases, cancer and overweight/obesity are being developed and will be available starting from the spring of 2020. To promote their implementation, a database of practical tools and further training are being developed.

Other possible ways to promote EBP include providing specific training courses and raising awareness of the sources to be consulted. To this end also, Ebpracticenet (e-learning), the VBVD's 'Evidence-Based Dietetics' committee (EBP action plan) and the 'Implementation of guidelines' project (workshops and e-learning) will launch various projects.

TABLE 1 - Overview of the main scientific sources for evidence-based practice in health care.

REFERENCE	DESCRIPTION	EXTRA INFORMATION
GUIDELINES AND POINT-OF-CARE SOURCES		
Ebpracticenet www.ebpnet.be *Anyone can log in for free using their ID card or via a request for a password.*	Excellent platform for evidence-based guidelines for primary health care, all validated and approved by CEBAM (Centre of Evidence Based Medicine).	Belgian guidelines, guidelines that are adapted for Belgian via context analysis, foreign guidelines and summaries of systematic reviews.
CDLH (CEBAM Digital Library for Health) www.cdlh.be *Anyone can log in for free using their ID card or a request for a password to consult certain sources. Broader access through subscription.*	CDLH is a springboard to databases of point-of-care sources (www.ebpnet.be and Dynamed), clinical practical guidelines (NHS, WHO, Domus Medica, RIZIV, Belgian Health Council), systematic reviews (Cochrane Library), critical analyses of articles (MINERVA), bibliographical databases (Ovid, Pubmed) and trade journals.	Belgian and foreign guidelines
Tripdatabase www.tripdatabase.com *Free search; not all the publications are open access.*	Search for guidelines and other types of sources from the Haynes pyramid also known as the pyramid of evidence-based information resources. Every source found has a pyramid-shaped icon, showing the type of information at a glance. Searching is possible with the PICO tool.	Foreign guidelines
PEN (Practice-based evidence in nutrition UK) www.pennutrition.com *Fee, discount if a member of the VBVD.*	A database with guidelines but also pathways and practice tools on nutrition and dietetics. Overviews or foreign sources are also given per topic.	Foreign guidelines
International Guideline Library www.g-i-n.net *Searching is free but there is a fee for access to the guidelines.*	An international network that supports the development and implementation of guidelines. Guidelines are also accessible internationally via the G.I.N. library.	Belgian and foreign guidelines
Up-to-date www.uptodate.com *Searching is free but there is a fee for access to the guidelines.*	Provides evidence-based clinical pathways, summaries and recommendations.	Foreign guidelines
Dutch dietary management guidelines www.dieetbehandelingsrichtlijnen.nl *Fee, discount if a member of the VBVD.*	A Dutch online database with a broad range of guidelines on the most common diets.	Foreign guidelines (the Netherlands)

REFERENCE	DESCRIPTION	EXTRA INFORMATION
EAACI allergy guidelines (European Academy of Allergy and Clinical Immunology)	Examples of specific guidelines for clinical nutrition (e.g. allergies, parenteral and enteral nutrition, diabetes).	Foreign guidelines
BSACI allergy guidelines (British Society for Allergy and Clinical Immunology)		
ASPEN guidelines (American Society for Parenteral and Enteral Nutrition)		
ESPEN guidelines (European Society for Clinical Nutrition and Metabolism)		
ADA guidelines (American Diabetes Association)		
EAL (Evidence Analysis Library), www.eatright.org Academy of Nutrition, USA		
SUMMARIES AND ASSESSMENTS OF SYSTEMATIC REVIEWS		
MINERVA www.minerva-ebm.be	A journal for Evidence-Based Medicine with critical interpretation of relevant publications from international literature.	In addition to systematic reviews, other types of studies are also critically discussed.
SYSTEMATIC REVIEWS (INCLUDING META-ANALYSES)		
Cochrane www.cochrane.org	Provides an overview of summaries to support the choice of approach in health care and offers instruments to assess the quality of different types of sources.	Since 2018 brief nutrition-related Cochranes are described in the 'Tijdschrift voor Voeding en Diëtetiek' by the VBVD in cooperation with CEBAM.
Tripdatabase www.tripdatabase.com	See above	Check the icon of the Haynes pyramid with the references found to see whether it is a systematic review.
INDIVIDUAL STUDIES		
Pubmed www.pubmed.com	Scientific database	Including systematic reviews and meta-analyses
Trip database www.tripdatabase.com	See above	
Scientific journals (peer reviewed)	e.g. The Lancet, JAMA, BMJ, NEJM, AIM, Clinical Nutrition	

Stay up to date via
> www.ebpnet.be
> www.vbvd.be
> http://voeding.ucll.be
> www.updlf-asbl.be

EXTRA INFO
WWW.NICE-INFO.BE

EVIDENCE-BASED PRACTICE
IN 5 STEPS

STEP 1: DETERMINE THE RESEARCH QUESTION

P - What is the problem? Who is the patient?
I - Which intervention is possible?
C - Which control group do you want to compare with?
O - What is the desired outcome?

Research question = ...

DETERMINE YOUR SEARCH TERMS

STEP 2: LOOK FOR EVIDENCE ON THE BASIS OF THE HAYNES PYRAMID

Are there guidelines or point-of-care sources?

e.g. Trip PEN ebpracticenet

NO

Are there synopses and appraisals of systematic reviews?

e.g. Minerva ebpracticenet

NO

Are there systematic reviews?

e.g. Trip Cochrane Library PUBMED

NO

Are there individual studies?

e.g. Trip PUBMED Peer reviewed tijdschriften

www.cdlh.be is a platform to various databases with guidelines, systematic reviews and individual studies

STEP 3: ASSESS THE QUALITY

YES → GUIDELINES VIA AGREE II INSTRUMENT* KEY MESSAGES VIA A GRADE (E.G. 1A, 2C)

YES → VIA CHECKLIST PER TYPE OF RESEARCH*

YES → VIA CHECKLIST PER TYPE OF RESEARCH*

YES → VIA CHECKLIST PER TYPE OF RESEARCH*

* via belgium.cochrane.org > tools & checklists

STEP 4: IMPLEMENT THE EVIDENCE

Develop an individual treatment plan together with the patient, taking into account his/her biological, psychological and social situation. Consult www.gezondheidenwetenschap.be for guidelines that have been reformulated to make them more understandable for patients.

STEP 5: EVALUATE THE APPROACH

Has the goal been achieved? Why or why not?

Overview of the main scientific sources for evidence-based practice in health care:
See table 1 in the article "Evidence-based practice in dietetics" Nutrinews 2019, no. 3

References

1. Former-Boon M., van Duinen J. (2019) Evidence-based diëtetiek: principes en werkwijze. Bohn Stafleu Van Loghum.

2. Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. BMJ 1996; 312 (7023): 71–72

3. KCE (2017 update 2019) Naar een geïntegreerd evindece-based practice plan in België. Rapport te raadplegen via https://kce.fgov.be/sites/default/files/atoms/files/KCE_291As_EBP-plan_Belgie_Bestuursplan_Synthese_2.pdf

4. Stegeman I., Koningsveld-Kortekaas M. Evidence-based practice – praktisch. Bijzijn XL 2017; 10 (8): 16-18

5. Smeijsters H. Onderzoek in en door de praktijk en practice evidence in de lerende organisatie; voorbeelden van onderzoek door kenniskringen van hogescholen. Thema 2009

6. www.cebam.be

7. DiCenso A, Bayley L, Haynes RB. Editorial: Accessing preappraised evidence: fine-tuning the 5S model into a 6S model. ACP Journal Club 2009; 151 (3): JC3-2 - te raadplegen via https://www.ciap.health.nsw.gov.au/training/ebp-learning-modules/module1/levels-of-evidence.html

8. Van Royen P. Grade: een systeem om niveau van bewijskracht en graad van aanbeveling aan te geven. Huisarts Nu 2008; 31 (9): 505-509

9. Verbeyst L., Van Hemelryck N., Vanhauwaert E. Evidence-based practice in de dieetpraktijk: kennis, attitudes, hindernissen en voorkeuren van Belgische diëtisten. Tijdschrift voor voeding en diëtetiek 2018; 8-12. Volledig rapport beschikbaar via https://voeding.ucll.be

10. Benhamed N., Adriaenssens J., Christiaens W., & Paulus D. (2017) Naar een aanpassing van de KCE richtlijnen aan de behoeften van gebruikers. Synthese. KCE report 284 As

11. Vanhauwaert E.: Kernboodschappen van richtlijnen: van theorie naar praktijk. Onderzoeksrapport. UCLL, juli 2019

12. www.cdlh.be