2022

Report of the Diagnosis Working Group

THE INTERNATIONAL LIPOEDEMA ASSOCIATION

GROUP MEMBERS

Håkan Brorson MD, PhD

Domenico Corda MD

Francesco Greco MD, PhD

Leif Perbeck MD, PhD

Cristhian Pomata MD

Anna Towers MD

Christian Ure, MD

EXECUTIVE SUMMARY

The Diagnosis Working Group of the International Lipoedema Association (ILA) was formed in November 2021 during the ILA inaugural meeting in Copenhagen. The group met virtually during 2022 via several videoconferences to accomplish their assigned task, which was to suggest how to clinically diagnose lipoedema, based on the best available evidence at the time. Consisting of seven physician /surgeon experts, the group carefully examined all the elements and controversial issues regarding lipoedema diagnosis. Using the PICO evaluation process, the group assessed each potential diagnostic element, referred to the existing review literature as well as their combined clinical experiences, and recommended a Diagnostic Scheme. In parallel process, the group used the scheme proposed in the 2017 Dutch Guidelines for Lipoedema (Hank and Damstra, 2017), and discussed which elements did and did not have a scientific basis at this time.

Any research or scientific discussion clarifies some issues but raises many new questions. The Diagnosis Group therefore proposes topics for further research that will help refine lipoedema diagnosis in the future.

PROPOSED DIAGNOSTIC SCHEME

Diagnosis of lipoedema may be made when all the following major criteria are present: A1,A2,A3 B1 is a minor criterion that may be present or absent. It serves to reinforce the diagnosis.			
A	1	Disproportionate subcutaneous fatty tissue distribution between upper and lower body, which is symmetrical	
	2	Reported enhanced sensitivity to touch in the affected areas with objective allodynia (elicited pain) on a pinch test	
	3	Normal hands and feet (in the absence of obesity or lymphedema complications)	
B	1	Significantly thickened subcutaneous fat in lower or/and upper extremity with sudden stop at the joints (“cuff sign” at ankle, elbow or wrist)	

I- INTRODUCTION

The broad question of "How do we diagnose lipoedema?" was deemed relevant enough by the International Lipoedema Association during its onsite inaugural meeting in Copenhagen, November 2021, that the seven-member Diagnosis Working Group was formed at that time. The group met virtually during 2022 via several videoconferences, to accomplish their task of suggesting how to clinically diagnose lipoedema, based on best available evidence at the time. Consisting of seven physician/surgeon experts, the group carefully examined all the elements and controversial issues regarding lipoedema diagnosis.

The members of the Diagnosis Working Group acknowledge that the scientific study of lipoedema is in its infancy. High level evidence is lacking. The main sources consulted were existing consensus documents and guidelines that are based on previously conducted critical reviews of the literature.

The working group members, being clinicians as well as clinical scientists, understand the reality of the clinical world in terms of socioeconomic factors and resources available. The premise of our group was that, for the diagnostic criteria to be most useful to clinicians at this time, patient diagnosis needs to be made using simple, non-interventionist medical anamnesis and physical examination – avoiding expensive and less available imagery or other diagnostic interventions.

One important problem raised by lipoedema patients concerns insurance coverage for treatments. There is a population of patients with self-diagnosed or therapist-diagnosed lipoedema who undergo conservative treatments such as manual lymph drainage and compression, or who ask for plastic surgery, and who request insurance coverage. Summarizing the current scientific evidence on the effectiveness of conservative or surgical lipoedema treatments was, of course, not the scope of this Diagnosis Working Group. However, the problem of how to make the diagnosis of lipoedema remains central, if intertwined with questions regarding access to currently available treatments, whether these are effective, ineffective or actually harmful.

Any research or scientific discussion clarifies some issues but raises many new questions. The Diagnosis Group therefore proposes topics for further research that will help refine lipoedema diagnosis in the future.

Note regarding the name of this syndrome:

The use of the label "lipoedema" throughout this report does not necessarily mean that the authors support this term as the final name for this syndrome. This Working Group was not specifically asked for their opinion regarding the naming of the lipoedema syndrome. We use the term "lipoedema" as a matter of convenience. It could equally be named the lipoedema-lipalgia syndrome, or whatever term the larger body of the ILA will ultimately recommend. Discussions are ongoing in other fora regarding the name for this disorder, considering that pain is a primary manifestation of the syndrome. A name such as lipoedema/lipalgia syndrome was proposed during the meeting in Copenhagen in November 2021. The suggestions of this Working Group regarding diagnosis will apply regardless of which name is ultimately decided, or retained.

II- INVESTIGATION MODEL AND PROCESS

The general questions

This group of clinical experts adopted an iterative process to examine and debate the various controversies and challenges on how to render a lipoedema diagnosis. Questions, expert opinion and supporting data were gathered through a series of virtual videoconference meetings and email discussions held during 2022, in which all seven members participated. At its first meeting on January 17, 2022, the Working Group refined the various elements of questions relating to lipoedema diagnosis. These general questions were:

1. What are the challenges in making a lipoedema diagnosis?
2. How does a clinician diagnose lipoedema, using easily available and non-invasive methods? Which elements should be considered, and which should be excluded?
3. If and how should these elements be weighted in the final diagnostic scheme or guide?
4. What do we know about the prevalence of lipoedema, acknowledging the serious lack of knowledge among general healthcare providers, and the lack of widely accepted diagnostic criteria?

The PICO investigative model

At its second meeting on March 8, 2022, the group adopted the PICO model (University of Illinois, Chicago, USA) to guide the enquiry and reporting. Using this evaluation process, the group assessed each potential diagnostic element, referred to the existing review literature as well as their combined clinical experiences, and recommended a Diagnostic Scheme. In parallel process, the group carefully examined the useful diagnostic criteria outlined in the 2017 Dutch Guidelines for Lipoedema (Hank and Damstra, 2017), and evaluated which elements did and did not have a scientific basis at this time.

The PICO process involves:

P= Patient, Population or Problem.
In our case, the overall question is: What elements do we use to diagnose lipoedema, given the present low-level scientific evidence available?

I= Intervention.
We explored the various elements in making a clinical diagnosis of lipoedema.

C= Comparison.
We compared lipoedema, versus another diagnosis, such as obesity.

O= Outcome.
We recommend a diagnostic scheme, including a clearer definition of elements of lipoedema that facilitate a clinical diagnosis.

Under the PICO model, there are many sub-questions that can be asked. The questions should be relevant and answerable.

The population considered (PICO=P) was of adult females with disproportionate body fat. In practice, these are patients who will see a clinician to determine if they have complications such as lymphoedema. Or, more commonly, they present to clinicians with symptoms of pain, distress regarding body shape, or well-formulated demands for surgical liposuction. Although the prevalence of lipoedema is difficult to define in the absence of clear and accepted diagnostic criteria, numerous patients are seeking plastic surgery treatment for often self-diagnosed lipoedema-related issues. Hence the importance of an international process to clarify the diagnostic criteria of this syndrome, as well as its natural progression, if any.

For our purposes, PICO I= Intervention involved firstly to define the investigative or research questions that would lead to a diagnostic scheme for lipoedema. Background questions, as defined in the PICO model, can normally be more easily answered using available texts or clinical guidelines. Such background scientific literature is very sparse in the lipoedema field.

Foreground questions are specific knowledge questions that affect clinical decisions and include a broad range of biologic, psychological, and sociologic issues. These are the questions that generally require a search of the primary medical literature. Recent searches have already been performed by The European Lipoedema Group (now subsumed into the International Lipoedema Association), to arrive at the recommendations in their 2020 Consensus Document. The ILA directives to the Diagnosis Working Group were that we should use available reviews and guidelines, as well as our own expertise, rather than performing another systematic review.

The evidence sources used by the Working Group were:

1. Existing Best Practice documents
2. Existing literature reviews and prevalence studies
3. Expert opinion of the members of this Working Group, consisting of seven internationally recognized physicians who assess and treat lipoedema patients.

There is little scientific data in the lipoedema field that can be labelled high-level evidence. According to the PICO model, research and deliberations on diagnosis should be based on clinical trials. Unfortunately, at present these are rare in the lipoedema field, and they are urgently required. We therefore had to use lower-level evidence sources. The discussion section of this Working Group therefore suggests many questions for further research.

The group adopted an iterative process to list, examine and debate the various controversies regarding lipoedema diagnosis, linking any relevant literature to the discussion. Given the paucity of research data, the controversial topics and questions to discuss were derived by comparing various European and American practice guidelines for lipoedema. They were also based on diagnostic challenges arising from our own clinical experience. Between meetings,

group members reviewed and reflected on the transcripts and video recordings of the meetings further commented in writing on the various issues and questions, as appropriate.

The subquestions and topics

Addressing the overall question of how to diagnose lipoedema leads to a variety of sub-questions:

1. How do we define lipohypertrophy as opposed to normal fat distribution?
2. What is normal versus abnormal pain in patients with suspected lipoedema? What is the specific type of pain found in lipoedema and how would we assess it in reaching a diagnosis?
3. Is lymphoedema a complication of lipoedema, and/or part of the diagnosis and progression of lipoedema.?
4. Diagnosis for other conditions often involves staging of the disease. Does 'pure' lipoedema as such, progress?
5. Can lipoedema be staged, and if so, how?
6. What is the link between lipoedema and obesity?
7. Is there oedema in lipoedema?
8. In those with class 3 obesity, what is the impact of weight loss on the excess fat volume of lipoedema limbs?

Unfortunately, there is often a lack of scientific evidence to help us answer many of these sub-qustions. When this arose, the group made mention of the importance of further research on that particular topic.

III- RESULTS

A- Psychosocial and cultural factors

It became apparent from the very first Working Group meeting that psychological, cultural, social and health care contexts are important challenges and considerations in defining a lipoedema diagnosis. Patients live in various countries that may have very different health care networks and population health profiles. While trying to be as precise as possible, the group acknowledged that diagnostic guidelines need to allow for flexibility if they are to serve their clinical purpose of providing the best evidence-based care possible for the patient, regardless of where they live and which medical insurance scheme is involved. Unfortunately, in most countries, lipoedema care suffers from inadequate health care system or insurance coverage. This poses a significant practical challenge for the physician or surgeon who is asked to label a particular patient as having lipoedema so as to enable them to receive treatment.

Formal, objective, "hands-off" interdisciplinary research studies, reviews conducted via national government health care institutes, will eventually be helpful. However, to avoid a vicious cycle

(i.e. How was lipoedema defined in any particular study?), it is urgent that the international community agree on diagnosis so that potential therapies can be assess using accepted criteria.

B- The problem of defining a comparison population (PICO C = Comparison)

Because so little is formally known, we are a very basic stage in defining lipoedema. A main discussion revolved around trying to define a lipoedema population separate from one with lipohypertrophy or with obesity. An involved discussion of pain in lipoedema was also key in trying to define subpopulations according to the type of pain experienced or elicited.

It also involved a discussion of whether there is edema in lipoedema and the relationship between lipoedema and lymphedema populations. Psychological considerations and diagnoses such as body dysmorphic syndrome, fibromyalgia and anxiety/depression also come into play. These questions could be clarified with future longitudinal research as well as the use of better biopsychosocial clinical metrics to assess our population of interest.

C- Diagnostic considerations: Pain and lipoedema

C1. What is the cause of the allodynia-type pain, as assessed on the "pinch test"?

We know that there is a degree of chronic inflammatory process in adipose tissue. In lipoedema patients, this inflammatory process is argued as a reason for the pain. But this cannot explain why we do not see this pain in obese patients. Dr Brorson reported that, in Dercum's patients they did fat biopsies and there was not much inflammation in those patients. The difference between Dercum's and lipoedema is that Dercum's have generalized obesity and much more pain all over the body compared to lipoedema patients. So we do not have an explanation for the pain. Is there a link between the allodynia of lipoedema and that of fibromyalgia? These remain questions for future study.

C2: Should pain on a "pinch test" be a sine qua non for diagnosis?

Pain on the "pinch test" is an important criterion for lipoedema diagnosis, but is it a *sine qua non* for the diagnosis? The opinion of the group members is that: if there is no pain, it is not lipoedema. Objective pain on the 'pinch test' must be a major criterion, as opposed to only subjective pain that the patient might present, because the latter would be very difficult to describe. It is difficult to assess lipoedema-related pain based only on subjective reports. If we get into trying to assess pain in ways other than with a "pinch test", we would get involved in musculoskeletal, neurological and psychological issues that would be difficult to assess for the purposes of diagnosis.

D- Diagnostic considerations: Is there oedema in lipoedema?

In the absence co-morbidities such as class 3 obesity, lymphoedema or chronic venous disease, Is there oedema in lipoedema? Hirsch et al 2018 have argued that with ultrasound you do not see echo-free areas as you would in interstitial edema, such as cardiac edema. So, they state that there is no oedema in lipoedema. The same conclusion was reached by a working group from Italy, which examined patients with lipedema using MRI (Celina et al 2020).
In the clinical experience of group members, if the BMI is 40-45 or less, and the patient is mobile and without chronic venous insufficiency, we usually do not detect oedema. Some group members perform echography and some MRI. And in lipoedema they find that there is no free fluid.

If there is no free fluid in lipoedema, is there possible excess fluid bound in tissues that could be called oedema clinically? Would any bound fluid be significant in terms of diagnosis and therapy? The group discussed this question of possible excess fluid that is bound in the tissues, and whether this equals oedema clinically. The argument, including in the German guidelines that are currently being developed, is that you do not see the fluid because it is bound in the tissues, to polysaccharides. It is not free fluid that can be seen on echography. However, if you press hard with the pitting test for three minutes or more, you might see oedema even if it is bound in the glycocaelyx. Does this water bound to proteoglycans equal clinically significant and detectable oedema, as traditionally defined? Working Group members argue that no, it does not.

E- Diagnostic consideration: Impact of weight loss on lipoedema

The 2017 Dutch guidelines list as a major diagnostic criterion: “No or limited impact of weight loss on the disproportionate fat distribution.” However, recent research has shown significant reduction in the volumes of the affected limb following bariatric surgery (Fink et al, 2020). Therefore, the present diagnostic scheme does not include that criterion.

F- Diagnostic consideration: Easy bruising

The subjective complaint of easy bruising has long been present in descriptions of the lipoedema syndrome. Objectively, clinicians may not see any evidence of easy bruising. More research evidence may soon be published that shows that easy bruising is relatively rare (*G. Erbacher, E. Mendoza, T. Bertsch in print*). Therefore, pending future research, this criterion was removed from the diagnostic scheme.

G- Diagnostic consideration: Joint laxity

Especially in North America, reports state that lipoedema is a connective tissue disorder and it is accompanied by joint laxity. The group discussed whether joint laxity should be a criterion in the diagnosis. Joint laxity is not mentioned in the Dutch guidelines, nor in guidelines from the German speaking countries. Clinically, group members stated that these patients do not have an anamnesis of joint distortions or joint injuries. It might be difficult to evaluate this problem

in routine clinical practice. It would be useful in future to better document to what extent these patients may have joint laxity, but members do not think that this criterion helps to define the diagnosis.

IV- PROPOSED DIAGNOSTIC GRID FOR LIPOEDEMA/LIPALGIA SYNDROME (PICO O= OUTCOME

The group agreed that the Dutch guidelines were a very good starting point. It is not short, but all the important elements are present there. The group used the Dutch guidelines as an initial working scheme, reviewing the diagnostic criteria individually, and comparing these with known research on the topic.

Figure 1.

DIAGNOSIS LIPEDEMA, THE WORK GROUP HAS ASSEMBLED A LIST OF CRITERIA, BASED ON CLINICAL EXPERIENCE AND SUPPORTED BY THE LITERATURE

Diagnosis is certain when present: A1+2+3+4+5 PLUS ((B6+B7) or (C8+C9) or (D10+D11) or E12). In the absence of at most 2 of these five criteria (A to E), the presence of the extra criteria F13 or F14 also assures the diagnosis.

		Anamnesis (A) (criteria of wold et al.)
A	1	Disproportionate fat distribution
	2	No / limited influence of weight loss on disproportionate fat distribution
	3	Easily in pain / bruised
	4	Sensitivity to touch / fatigue in extremities
	5	No reduction of pain when raising extremities
		Physical examination (B,C,D,E)
		Upper leg:
B	6	Disproportionate fat distribution
	7	Circularly thickened cutaneous fat layer
		Lower leg:
C	8	Proximal thickening of subcutaneous fat layer
	9	Distal thickened of subcutaneous fat, accompanied by slender instep (cuff-sign)
		Upper arm:
D	10	Significantly thickened subcutaneous fat layer in comparison with vicinity
	11	Sudden stop at elbow
		Lower arm:
E	12	Thickened subcutaneous fat, accompanied by slender back of hand (cuff-sign)
		Extra criteria
F	13	Pain when applying bi-manual palpation
	14	Distal fat tissue tendrils of the knee (popliteus)

Ref: Halk and Damstra 2017

Over a series of meetings, the group deconstructed the Dutch scheme, eliminating criteria for which there is insufficient research evidence, or which have been contradicted by current evidence. Our proposed new diagnostic scheme is presented in Table 1.

Table 1: PROPOSED DIAGNOSTIC SCHEME

Diagnosis of lipoedema may be made when all the following major criteria are present: A1,A2,A3 B1 is a minor criterion that may be present or absent. It serves to reinforce the diagnosis.			
A	1	Disproportionate subcutaneous fatty tissue distribution between upper and lower body, which is symmetrical	
	2	Reported enhanced sensitivity to touch in the affected areas with objective allodynia (elicited pain) on a pinch test	
	3	Normal hands and feet (in the absence of obesity or lymphedema complications)	
B	1	Significantly thickened subcutaneous fat in lower or/and upper extremity with sudden stop at the joints ("cuff sign" at ankle, elbow or wrist)	

V- DISCUSSION

Any research or scientific discussion clarifies some issues but raises many new questions. There are many ongoing diagnostic and "naming" challenges. The Diagnosis Working Group therefore proposes topics for further research that will help refine lipoedema diagnosis in the future.

1.Differentiating between lipoedema and obesity

At what point can we say that a lipoedema patient is also obese? Although the two conditions often co-exist, we need a better metric that BMI, in best practice guidelines, to try to clinically differentiate between those with lipoedema and those who are also obese. For example, a lipoedema patient may have a high BMI but a small waist circumference, no excessive visceral fat, and no metabolic syndrome. However, according to the BMI they might be categorized as having class 3 obesity. Group members suggest that waist-to-height ratio would be a better clinical metric to use in assessing these patients.

2. The pattern of lipohypertrophy in lipoedema

A major diagnostic criterion is the presence of disproportionate fat between upper and lower body. Is there a significant number of patients who might have a symmetrical disproportion *within* either upper or lower limbs, i.e. centrally versus distally, who also fulfill the other diagnostic criteria, including the abnormal elicited pain within those lipohypertrophic tissues?

3. Is there early stage lipoedema where pain has not yet developed?

Without pain, group members agreed that it is not lipoedema. The JWC International Consensus document (2020, p. 32) also states: *"lipohypertrophy …is subcutaneous fatty tissue increase in the legs and sometimes in arms but [with] NO pain/complaints in soft tissue."* But before a potential young lipoedema patient develops pain, say -- a girl of 16 years of age… is it lipohypertrophy that the young woman has before she gets pain? Then one day she develops pain. She may state that since they were young, their lower body is twice the size of their upper body. Before she did not have lipoedema and now she does? Group members admitted that lipohypertrophy can remain as such for a lifetime. This is an important question for future retrospective and prospective research. We need patient follow-up studies with careful clinical documentation of pain symptoms and signs over time, especially regarding the onset and type of pain experienced. We can then better understand at what point lipoedema patients develop pain, relative to the simple lipohypertrophy.

4- Prevalence of lipoedema

Given the lack of a standardized diagnostic scheme, the prevalence of lipoedema in various parts of the world and in various populations is unknown. Prevalence studies are therefore urgently required, using agreed-upon international diagnostic criteria. The opinion of this working group is that lipoedema as defined here is not as common as certain literature states.

5. Are there definable lipoedema stages?

Existing staging systems confuse staging of the "pure" lipoedema/lipalgia syndrome and its co-morbidities and complications -- such as obesity, with or without its related secondary lymphoedema. The members of this group believe that if lymphoedema develops in lipoedema patients, it is obesity-related, rather than being related to the lipoedema itself.

The 2020 JWC consensus document states that lipoedema itself is not progressive. There are no Stages 1,2 and 3. There is a Grade 1,2,3 which is a different kind of expression of this disproportionate fatty tissue which is painful. In our opinion, the degeneration seen in lipoedema does involve different stages. Our own clinical experience is that, as lipoedema patients age, over a period of years, from being teenagers to getting older, the fat disproportion changes, but it is related to general weight gain over time.

To try to characterize the fat, Brorson et al. did biopsies on 53 patients with Dercum's disease, compared with 28 normal patients (personal communication 2022-03). They saw inflammation, but it was not different from the inflammation seen in BMI-matched obese patients without

Dercum's. So there was inflammation in the fat in both groups, with no difference between the two groups. We would agree that there is some degree of chronic inflammatory process with lipoedema as well, although the disease is not progressive as described in the old staging systems. In our clinical opinion, there is possibly some progression of the fibrotic and sclerotic changes in the skin and subcutaneous tissues as far as the chronic inflammation is concerned. Do we know enough to say how progressive the process is, and if so, could we stage it clinically or would it require histological information? At present, these tissue changes are difficult to measure clinically, using only palpation as a tool. And we cannot routinely perform biopsies on our patients. We might use echography, studying these women over time, but most clinicians are not experts in high-definition echography at this time. In future, new, accessible, and affordable imaging modalities will help with this question. We need high-definition echography, MRI or other novel imagery techniques, to study the natural course of both treated and untreated lipoedema.

6. How do we describe lipoedema severity?

Based on future studies, it might be useful to have a scoring (or weighted) system as part of the diagnostic scheme, to have a multimodal appreciation of the severity of the problem. For plastic surgeons, it is important to have a defined clinical grading system, so that it gives the surgeon some indication of how many operations they will need. A grading system would also be important when comparing results from liposuction. Dr. Perbeck has worked on possible clinical staging or grading systems, and these are a priority for future development. For example, based on weighted diagnostic criteria and a quality of life (QOL) score, we could differentiate those with more severe versus milder disease. Surgical reports would quantify and describe the various symptoms and QOL scores before and after surgery. It is important for clinicians to evaluate those, using patient-reported questionnaires as well as internationally accepted objective metrics.

7- Quality of Life

We need Quality of life (QOL) studies that formally examine which diagnostic criteria most impact QOL. The clinical opinion of Working Group members is that the elicited pain that is part of this syndrome, is an important and troubling symptom that impacts QOL. However, it will be a challenge in the QOL studies to differentiate between the pain of lipoedema versus pain due to any concurrent obesity-related orthopedic complications, for example.

8. Medical insurance coverage for lipoedema treatments and the name of the syndrome

There is the argument that we should be careful about removing the label "oedema" from the name of this syndrome because these patients might then no longer qualify for medical insurance coverage for their treatments. For example, insurers might argue that the patient does not have oedema and therefore does not need any compression garments. The Working Group agrees that the use of compression decreases the pain associated with this syndrome. Compression might block the pain signals, not unlike trans-epithelial nerve stimulation (TENS).

It may take years for insurance companies to understand the importance of compression treatments to reduce the pain related to this syndrome. However, it would be medically incorrect to continue to use a misleading name for this disease syndrome just because patients would not be able to obtain coverage for compression garments. Some Working Group members suggested that we combine the two terms lipoedema with lipalgia in a double-barreled name: lipoedema-lipalgia syndrome. However, for medical insurance coverage at this time, the clinician might need to use the original diagnostic name of "lipoedema", or to document the diagnosis of lymphoedema if it is also present.

VI- CONCLUSION

Over a series of virtual meetings during 2022, the ILA Diagnosis Working Group explored the elements that have traditionally been part of the diagnosis of lipoedema, according to expert opinion. Based on a PICO process, the 2017 Dutch guidelines, existing reviews by the European Lipoedema Association, and clinical experience, the group concluded that only three major and one minor criterion passed their scrutiny. The group therefore recommends that the elements in Table 2 be retained as the diagnostic criteria for lipoedema. The working group was not mandated to give an opinion as to what this syndrome should be named; in other words, whether the name "lipoedema" should be retained, or whether the condition should be called the "lipalgia syndrome" or any other name. However, the group did agree that, based on current reliable knowledge, there is clinically "no oedema in lipoedema", whereas elicited tenderness (allodynia-type pain) is a major feature.

One important problem raised by lipoedema patients concerns insurance coverage for decongestive lymphatic therapy and for surgical treatments. Future research will further clarify the effectiveness of available treatments for lipoedema. However, the problem of how to make the diagnosis of lipoedema in the first place remains central to clinical and research development. Without an internationally accepted definition of the syndrome, high-level research efforts will be retarded. Internationally accepted diagnostic criteria are primordial in choosing patients for clinical trials to assess whether currently available treatments are effective, ineffective, or actually harmful.

We hope that our deliberations will lead to a diagnostic scheme for lipoedema that will, in turn, enhance our understanding and definition of this syndrome in all its aspects – including refining the diagnostic process itself.

VII- REFERENCES

PICO model: https://researchguides.uic.edu/c.php?g=252338&p=3954402
Accessed 2022-03-08

International Consensus document, "Lipoedema: a paradigm shift and consensus". Journal of Wound Care, Vol 29, Supp 2(11), 2020

Halk AB, Damstra RJ. First Dutch guidelines on lipedema using the international classification of functioning, disability and health. Phlebology 2017, Vol. 32(3) 152–159

From Herpertz about prevalence and cases of persistent lipoedema-pain after bariatric surgery:
Herpertz U. *Krankheitsspektrum des Lipödems an einer Lymphologischen Fachklinik - Erscheinungsformen, Mischbilder und Behandlungsmöglichkeiten. Vasomed 1997; 5: 301-307. 39.*

Herpertz U. *Entstehungszeitpunkt von Lipödemen. LymphForsch 2004; 8: 79-81*
Cornely M., Hasenberg T., Cornely O., Ure C., Hettenhausen C., Schmidt J. *Persistent lipedema pain in patients after bariatric surgery: a case series of 13 patients*

Fink JM, Schreiner L, Marjanovic G, Erbacher G, Seifert GC, Foeldi M, Bertsch T. Leg volume in patients with lipoedema following bariatric surgery. Visceral Medicine, online 2020, DOI: 10.1159/000511044

Celina M, Gibelli D, Soresina M, et al Non-contrast MR Lymphography of lipedema of the lower extremities. Magnet Reson Imaging 9/2020

Hirsch T, Schleinitz J, Marshall M, Faerber G, Is the differential diagnosis of lipoedema by means of high-resolution ultrasonography possible? Phlebologie 4/2018

Erbacher G, Mendoza E, Bertsch T. Schwellneigung der Oberschenkel und Hämatomneigung bei Patientinnen mit Lipödem – subjektive Wahrnehmung versus objektive Untersuchung. Vasomed 35. Jahrgang_1_2023

2022-10-12

REPORT OF THE DIAGNOSIS WORKING GROUP
INTERNATIONAL LIPOEDEMA ASSOCIATION

GROUP MEMBERS

Håkan Brorson MD, PhD
Specialist in Orthopaedic and Plastic Surgery; Plastic and Reconstructive Surgeon, Skåne University Hospital, Malmö, Sweden; Senior Consultant Plastic Surgeon, Department of Clinical Sciences and Professor of Plastic Surgery, Lund University, Lund, Sweden.

Domenico Corda MD
Physician and contract professor, Phlebo-lymphological Rehabilitation, Pavia University; Head of Polimedica San Lanfranco, Medical Center,Pavia, Italy; Director of Lymphological Services, Padova, Italy.

Francesco Greco MD, PhD
Surgeon, Director, Bariatric and Metabolic Surgery Unit, Poliambulanza Foundation Hospital, Brescia, Italy.

Leif Perbeck MD, PhD
Senior Consultant, Huddinge University; Associate Professor, Karolinska Institute; Surgical Consultant, Huddinge University Hospital and Karolinska University Hospitals; Plastic surgeon, Conturkliniken, Stockholm, Sweden.

Cristhian Pomata MD
Specialist in General and Plastic Surgery; Attending Plastic Surgeon, Comprehensive Lymphedema and Lipoedema Treatment Unit, Planas Clinic, Barcelona, Spain.

Anna Towers MD
Palliative and Supportive Care Physician; Director, Lymphedema Program, McGill University Health Centre; Associate Professor, Department of Oncology, McGill University, Montreal, Canada.

Christian Ure MD
Specialist in Internal Medicine and Angiology; Department Head, Rehabilitation Clinic for Lymphangiology with Acute Care Unit, Wolfsberg Lymphology Clinic at the LKH Wolfsberg, Austria