Welcome to a tour of Limb Volumes Professional 6.0

LVP6.0 is the latest version of the world famous and widely used lymphedema tracking and reporting software.

LVP was originally developed by therapists for therapists. It has been evaluated in the field and has received rave reviews for ease of use, accuracy, flexibility and for its utility in patient reporting and documentation use. Its utility has further been demonstrated by its use in lymphedema clinical and research studies with scientific presentations at international meetings. This the latest version is more streamlined and included multiple additional capabilities.

It is the only automated limb volumes tracking software that allows you to:

- choose any segment length for upper and lower limb volume determinations
- choose to specify and automatically track total limb volumes and also proximal and distal limb volumes
- include methods and algorithms for inclusion of both hand and foot volumes that are based on scientifically validated and published procedures
- immediately view graphical displays of limb segment-by-segment comparisons
- provide a capability to record, track and report biophysical measurements including bioimpedance and tissue dielectric measurements (TDC) as indices of edema changes
- provide validated tabulated and graphic summary reports for documentation of changes in total limb volume, edema volume, proximal-vs-distal limb volumes and biophysical measures of edema changes
- provide patient data and information within a self-contained file including visit-by-visit summaries and comments
- provide unlimited technical support

Please review the following sequence of documented screen shots that show some of the main features of LVP6.0 and associated procedural steps in a bit more detail. Further instructional and other material is available at <u>www.limbvolumes.org</u> If you have any questions you may contact us at <u>support@limbvolumes.org</u>

When LVP6.0 opens you will arrive at this page ---- the HELLO page

LIMB VOLUME CA	LCULATION, 1	RACKING & DOC	UMENTATION	View	Visit 1
Limb Vol	umes Profe	ssional Versio	n 6.0	Full Screen	Visit 2
Software b	y Clinical Soft	tware Innovations	s (CSI)	Reset Screen	Visit 3
This is a fully functional sing	gle machine licens	e version of Limb Volun	nes Professional 6.0.	INFORMATION	Visit 4
Educational and Tutorial	information cover	ing all aspects of progra	m operation and	HELLO page	Visit 5
measuren Additional and related	nent methods are i d information is fre	n C:\Users\Public\LVP60 ely available at www.lir	CD <u>nbvolumes.org</u>	INTRO page	Visit 6 Visit 7
LVP6.0 helps you to easily an	d systematically ca	alculate, track, documen	t and report your	PATIENT page	Visit 8
patients' limb volumes and ot	her biophysical me	easurements during the	course of therapy.	START page	Visit 9
For each patient visit that you	ı measure limb size	e, simply enter the limb		BIOZ Tracking	<u>Visit 10</u>
measurements and let the sof	ftware calculate lin rovide an image of	nb volumes and display	the needed	TDC Tracking	Visit 11
You can name, save, print an	d recall self-contai	ned patient records as w	vith any Excel file	VOLUME Tracking	Visit 13
To see various Software Feat	ures of LVP 6.0 yo	u can click on the INFO	RMATION tab.	SEGMENT Tracking	<u>Visit 14</u>
				HAND page	Visit 15
Registration and	Operating	Activate	Click Here to	HAND Tracking	<u>Visit 16</u>
	instructions	soltware	BEGIN	FOOT page	Visit 19
Multiple TABS with ger	nerally self explan	atory descriptions		FOOT Tracking	Visit 19
Serial Number LVP5775ACFP2	2047738339NLN			ACTIVATE	Visit 20
To register, purchase or convert	to a permanent versi	on go to: <u>http://limbvolu</u>	<u>mes.org</u> 2014-02-23		<u>Visit 21</u>
For information support@limbvo	lumes.org	©2014 Clinical So	ftware Innovations	Click this to	Visit 22
		Click this tab to B	EGIN	Register and receive an activation code	<u>Visit 23</u> <u>Visit 24</u>

This is the PATIENT page. On the patient's 1st visit enter their name, id and other information including upper or lower extremity and whether to include HAND or FOOT measurements



If you are including biophysical measures such as bioimpedance (BIOZ) or tissue dilelectric constant (TDC) as edema indicators then values shown in green are posited ratios useful as lymphedema thresholds

This is the START page where you should enter limb and segment lengths for the patient



- •Limb Length is the maximum distance up the limb at which you will measure and record limb girth
- •Segment Length is the distance between girth measurements (could be fixed or variable)
- •If variable length is chosen the segment lengths are set separately on the "segments" page
- •Hand Length is the distance from middle finger tip to wrist (only used if HAND is chosen as option photo on HANDC page)
- •Segment Length for hand is distance between consecutive measurements (Only used if if HAND option is chosen)
- •BMI is the patient's Body Mass Index that is automatically determined based on height and weight
- BSA is the patient's Body Surface area

•A SIMILAR PAGE IS DISPLAYED IF LOWER EXTREMITY IS CHOSEN ON THE PATIENT PAGE (could be with or without (FOOT)

This is the HANDC page where you enter HAND measurements if it is selected as an option The hand measurement method is selected on the PATIENT page (width-depth or girth)

	Enter	Visit Nu	umber	>	1	▶ 21	All measure	ements mus	t be entere	d in millime	eters (mm)	▶ 3	Segments	
E	Based on	the data	entered t	here a	re	7		full seg + 1	partial seg	of length =		0	7	
ст		Enter h	and me	asure	ments	in mm	NOT in cm	n for calcu	lating ha	nd volume	es	View		
from	Enter wid	ith & depti	h data in ye	ellow ce	lls below	in mm		Width-De	epth Mode	I is ACTIVE		Full Screen		
ulnar	- F	Right Han	d	1	Left Har	nd	seg		Volum		Paget Care			
styloid		width	depth		width	depth	num	Width-Dep	oth Model			Reset	Screen	
0		60.0	37.0		60.0	37.0		Right	Left	Right	Left	Inform	nation	
3		100.0	37.0		100.0	37.0	1	69	69	0	0	HELLO	D page	
6		90.0	20.0	1	90.0	20.0	2	63	63	0	0	INTRO) page	
9		88.0	22.0		88.0	22.0	3	44	44	0	0	DATICA	IT page	
12		120.0	28.0		80.0	18.0	4	62	40	0	0	PATIER	ii page	
15		65.0	15.0		65.0	15.0	5	48	28	0	0	STAR	T page	
18	-	47.0	13.0	-	47.0	13.0	6	19	19	0	0	BIOZ T	racking	
21		40.0	11.0		40.0	11.0	-	12	12	0	0	TDC T	racking	
												VOLUME	Tracking	
After d	ata has l	peen ente	ered click	button	to trans	sfer to H/	AND form	317	275	0	0	SEGMENT	Tracking	
Ulna head				Button	to train				2.0			HAND	page	
	1					Tran	sfer Data					HAND T	racking	
					10	1. To i	nclude hand n	neasurement	select it on	the PATIENT o	age	FOOT	page	
12	TRAT		No.	13.0		2. Also	o select the m	easurement	method on t	he PATIENT pa	ige	FOOT T	racking	
	S.A.S. MAR	1 200	Second 1	11		3. Whe	en 1 & 2 are do	one enter the	data into the	YELLOW cells	above			
	T					4. Whe	en 3 is done cl	ick the Trans	fer Data to H	AND				
0	3	6 9	12	15	18									

Photo shows measurements at 3 cm intervals. In this example the width-depth method was chosen. After measurements are entered, calculated hand volumes are transferred to the visit number you specify in the "visit number" (here shown as visit 1). Hand (or foot) volumes are added to the limb volumes for that visit.

This is an UE Visit 1 page (v1) where you enter arm girths and biophysical data for v1 Limb and edema volumes and biophysical ratios are automatically determined

		Visit 1		L							Full So	reen	Reset	Screen	HELLO
	Affec	ted Limb	Limb	Optio	on to t	ransfe	r norm	nal	Segment	Info Page					INTRO
	Rig	ht Limb	Length	limb	girths	to all c	other v	visits	Length (cm)	Total #	Righ	it	L	eft	PATIENT
		1	► <mark>4</mark> 4						▶ 4	Segments	Proximal	Distal	Proximal	Distal	START
	From d	ata there are	11	full segme	ents plus o	ne partial	segment	of length =	0	11	1920	1569	1315	986	HAND
	Enter	Circumfere	nces in yel	low cells b	elow				Use visit 1 norm va	lues for all visits	Pro	ximal -	Distal Opt	ion	FOOT
		Note that t	he first circ	umferenc	e pair to	be ente	red								Visit 1
cm	from	for "0" cm	correspon	ds to eithe	r the wr	ist or ar	kle		Limb Volumes	Right	Lef		Edema	%Edema	Visit 2
wri	stor	Circumfer	ences (cm)	segment					Total Volume (ml)	3806	257	6	1231	47.8	Visit 3
an	kle	Right	Left	number	Volun	ne (ml)	TDC	Values	Limb only (ml)	3489	230	1	Disable	Instruction	Visit 4
	0	22	16		Right	Left	Right	Left	Hand only (ml)	317	275				Visit 5
	4	24	18	1	169	92	39.0	25.0			•				Visit 6
	8	26	20	2	199	115			■ Right Opt	ion compares	proxima	- ais	tal volur	nes.	Visit 7
	12	29	23	3	241	147	BIOZ	Values	<u> Vou</u>	determine bo	undary p	blacen	nent.		Visit 8
	16	31	25	4	287	184	Right	Left	450 -						Visit 9
	20	33	27	5	326	215	250.0	320.0	Segment	Volumes (cm ³)		S	egment		Visit 10
	24	33	27	6	347	232			400			< ∨	olumes		Visit 11
	28	33	27	7	347	232	Ra	itios	350			s	hown		Visit 12
	32	34	28	8	357	241	TDC	1.560	300			fo	or easy		Visit 13
	36	35	29	9	379	259	BIOZ	1.280	250			← v	isualizat	ion	Visit 14
	40	37	31	10	413	287	L-Dex	24	200			а	nd		Visit 15
	44	36	30	11	424	296			200			ic	dentifica	tion	Visit 16
	13					_			150	┉╻┉╻┉╻	┝╍╝╏╾┛╏┝╍		f		Visit 17
				╘			5 1 '	Edema			- <u>2</u> -12-12-12-12-12-12-12-12-12-12-12-12-12-	n	otential		Visit 18
	G	irths for	affected	Ea	ch seg	ment		indices					rohlem		Visit 19
	a	nd contra	lateral		volum	e is			50 + + + +				roac		Visit 20
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	ir	nto yellov	v cells	a	nd gra	phed	Vi	SIT	123	45678	9 10 11				Visit 22
	_						a	nd	Click tab to ge	et					Visit 23
	9				<u> </u>		Ins	sert	a visit summa	rv Segment	Number				Visit 24
				-	e		Com	nents	& comment p	age					SUMMARY
		-					F-1 -								50 -
		Inerapist	0044 0017	MEGOIRE	F	rt. Name	Fake P	atient Na	ime	To sume the		Date	23-Jan-14	1	
		Copyright	2014, CSI/B	INECO/BS	RI	D	13579			ix number					

This is a one click automatically generated v1 summary and comment page

Limb Volumes	Right	Left	Edema	%Edema	
Total Volume (ml)	3806	2576	1231	48	
TDC Values		Proxima	and Dista	l Volumes (n	nl)
Right	Left	Right		Left	
39.0	25.0	Proximal	Distal	Proximal	Distal
		1920	1569	1315	986
BIOZ Values		Visit Date	1/23/2014		
Right	Left	Visit #	1		
250.0	320.0	The second second			
270					
Ratios					
TDC	1.560				
BIOZ	1.280				

Enter comments below in textbox then click anywhere outside the box

All relevant data entered into and calculated on visit 1 (or any visit) are summarized and available for documentation And printing

Enter any comments within this dialog box

All comments and summarized data Are saved with the patient's file

This is the SEGMENT page that is presented if you choose to have variable segment lengths Here it is illustrated for a lower extremity with a total limb length of 80 cm



After entering distances click the adjacent button

Accept values and Return

After entering the distances from the reference point at which you will or have made your girth measurements you click this tab which sets up the current visit for you to then enter the measured girth values

This is a v1 page in which the variable segment length option was chosen

			Visit 1								Info Dago	Full Screen	Reset	Screen	HELLO
	Aff	ec	ted Limb	Limb						Segment	mio Page				INTRO
	1	Rig	ht Limb	Length	2					Length (cm)	Total #	Right	L	eft	
		0.03		► 80	VARIABLE	SEGMENT	LENGTH	OPTION	IS ACTIVE	▶ 4	Segments	Proximal Distal	Proximal	Distal	START
	Fror	m da	ata there are	20	full segm	ents plus o	ne partial	segment	of length =	0	20	3625 1823	2388	1071	HAND
Enter Circumferences in yellow cells below										Use visit 1 norm va	lues for all visits	Proximal	Distal Opt	tion	FOOT Visit 1
cm	from for "0" cm corresponds to either the wrist or ankle									Limb Volumes	Right	Left	Edema	%Edema	Visit 2
wr	ist o	r	Circumfere	ences (cm)	segment				-	Total Volume (ml)	5765	3734	2032	54.4	Visit 3
a	ikle		Right	Left	number	Volun	ne (ml)	TDC	Values	Limb only (ml)	5448	3459			Visit 4
0			22	16		Right	Left	Right	Left	Hand only (ml)	317	275	[Disable	e Instructioi	Visit 5
10		5	24	18	1	421	230	39.0	25.0						Visit 6
20	_	3	26	20	2	498	288			Right	Those are	Drovimal dia	tal valu	imac	Visit 7
35	-5		29	23	3	904	553	BIOZ	Values	🗆 Left	These are	Proximal-uis		imes	Visit 8
50			31	25	▲ 4	1075	688	Right	Left	2000 -					Visit 9
60			33	27	5	816	538	250.0	320.0	2000					Visit 10
80	ノ		33	27	6	1734	1161			1800					Visit 11
								Ra	atios	1600			Visit 12		
	TDC 1.560									1400	→	shown for easy			Visit 13
					tne			BIOZ	1.280	1200		visualization			Visit 14
				proxir	nal-dis	tal		L-Dex	24	1000		and identificati	on 📃		Visit 15
				bound	dary		, j			900		Visit 16			
				set by	vou]		000		problem areas			Visit 17
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measurements is variable Summary and															Visit 23
and automatically set by Insert													Visit 24		
Ŋ	/οι	ır	prior de	etermina	ation			Com	ments		Jegmen	t Number			SUMMARY
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	Inerapist Pt. Name Fake Patient Name Date 23-Jan-14												1		
			copyright	2014, 031/01	WIECU/D3	M	UI IU	13579			TX number				

This is the FOOTC page where you enter FOOT measurements if it is selected as an option Foot measurement method is as indicated in the figure and has been previously validated



After measurements are entered, calculated foot volumes are transferred to the visit number you specify in the "visit number" (here shown as visit 1). Foot volumes are added to limb volumes for that visit. A filled in data sheet is shown on the next page

Foot Volume Data Entry Page With Sample Data Entered



Note that all of these measurements must be entered as millimeters (mm)

This is the Limb Volume tracking page. It reports and graphs sequential changes in Limb Volume, Edema Volume and Percentage Edema from the initial visit

Unilateral Upper Extremity						BMI=21.5kg/m2			BSA	BSA=1.6 m2			Fake Patient Name			13579				3/1/2014 10:15				
Yisit	1	2	<u>3</u>	<u>4</u>	5	6	<u>7</u>	8	<u>9</u>	<u>10</u>	<u>11</u>	12	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	22	23	24
Right Limb Volume (ml)	5765	5402	5402	4713	4388	4075	4388	4713	4071	4071	4321	3758	3607	3607	0	0	0	0	0	0	0	0	0	0
Left Limb Volume (ml)	3734	3734	3734	3734	3734	3734	3734	3734	3459	3459	3459	3459	3459	3459	0	0	0	0	0	0	0	0	0	0
Edema (ml)	2032	1668	1668	979	654	342	654	979	612	612	862	300	148	148			1							
%Edema	54	45	45	26	18	9	18	26	18	18	25	9	4	4										
Right: % Vol change		-6.3	-6.3	-18.2	-23.9	-29.3	-23.9	-18.2	-29.4	-29.4	-25.1	-34.8	-37.4	-37.4				2			8		1	
Left: % Vol change		0.0	0.0	0.0	0.0	0.0	0.0	0.0	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4	9 9 9 9					1				



Note: In the above graphics, Visit refers to patient visits during which limb volume measurements were made and recorded **Right Limb**

The AFFECTED Limb(s) of this patient is COMMENTS:

Double click on COMMENTS to enter or edit your comments

Sheet can be printed and use as part of documentation and report on patient progress

This is the BIOZ tracking page. It reports and graphs sequential changes in limb bioimedance values and side-to-side BIOZ ratios



Default ratio is entered based on conditions and values set in PATIENT page but can be changed manually if desired

This is the TDC tracking page. It reports and graphs sequential changes in Tissue Dielectric Constant values and side-to-side TDC ratios as index of tissue water

	Unilateral Upper Extremity BMI=21							kg/m2	BSA	\=1.6 r	n2	Fake Patient Name					13579	9		3/1/2014 10:15				
	TDC probe depth (mm) used for this evaluation									2.5 TDC measurement site														
Visit	1	2	3	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	8	9	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	14	<u>15</u>	<u>16</u>	17	<u>18</u>	<u>19</u>	<u>20</u>	21	22	<u>23</u>	24
TDC Right	39.0	38.0	36.0	36.0	37.0	35.0	33.0	31.0	31.0	30.0	28.0	29.0	27.0	26.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TDC Left	25.0	26.0	28.0	26.0	25.0	24.0	25.0	25.0	23.0	28.0	25.0	26.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TDC Ratio	1.560	1.462	1.286	1.385	1.480	1.458	1.320	1.240	1.348	1.071	1.120	1.115	1.080	1.040										
Threshold Ratio	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303	1.303
Right: % TDC change		-2.6	-7.7	-7.7	-5.1	-10.3	-15.4	-20.5	-20.5	-23.1	-28.2	-25.6	-30.8	-33.3	٦		chang	tos in i		aluos f	romv	1		
Left: % TDC change		4.0	12.0	4.0	0.0	-4.0	0.0	0.0	-8.0	12.0	0.0	4.0	0.0	0.0	7		Chang	ses in				•		



The AFFECTED Limb(s) of this patient is **Right Limb** Double click on COMMENTS to enter or edit your comments

Set THRESHOLD Ratio

COMMENTS:

Default ratio is entered based on conditions and values set in PATIENT page but can be changed manually if desired

This is the GRAPH page that reports and graphs sequential changes in limb volume expressed as total limb volume and also as proximal and distal volumes for both limbs



Visit

0 2

12 14

Visit

8 10

16 18

20 22 24 26

This is an example of a volume SUMMARY page that can be directly used as a summary report



Note: In the above graphics, Visit refers to patient visits during which limb volume measurements were made and recorded The AFFECTED Limb(s) of this patient is Tx Limb

-						2.7
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_	_				_	_

Mary was first seen on October 3, 2004 being referred by Dr. Wilson. CDP therapy was initiated on October 5, 2004 and progressed at weekly intervals. As of this date her affected arm limb volume is reduced from an initial value of 4337 ml to 3671 ml. This corresponds to a reduction in edema volume from 1580 ml to 883 ml and represents a reduction in percentage edema from an initial value of 59% to a current value of 32% Mary is quite pleased with her progress and has a significantly improved outlook.

For bilateral cases the labels are automatically changed to reflect right and left limb volumes and percentage changes in limb volume Please visit <u>www.limbvolumes.org</u> To download a trial version of Limb Volumes Professional (LVP6.0) And feel free to contact us at <u>support@limbvolumes.org</u> with any questions