



DETAILED DATA ON  
HOW DO WE WALK AND MOVE

# HUMAN MOTION IS PERSONAL AND COMPLEX

CHALLENGES IN MOTION CAN  
LEAD TO VARIOUS PROBLEMS  
IN THE HUMAN BODY.

HUMAN MOTION CAN BE MEASURED  
AND USE THE MEASUREMENT RESULTS FOR  
ANALYSIS IN  
PREVENTION AND REHABILITATION.



# MOTION MEASUREMENT & ANALYSIS FOR

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REHABILITATION



PREVENTION

# OBJECTIVE DATA FOR PREVENTION AND REHABILITATION

## FITNESS/EXERCISE & ATHLETE

Measuring performance to

- ✓ achieve the best possible performance
- ✓ achieve the planned goals
- ✓ finalizing the optimal technique
- ✓ maximize the recovery in case of traumas







# PRESENT MEASUREMENT DEVICES

OCTOBER 2020



## LABORATORIES AVAILABLE MAINLY FOR TOP ATHLETES

- Very expensive methods and devices
- Measuring in a 'sterile' environment
- All the natural circumstances are missing



NEED FOR  
A GENUINELY MOBILE  
MOTION MEASUREMENT DEVICE  
TO BE USED IN A NATURAL  
TRAINING ENVIRONMENT



# MOVESOLE RESEARCH

## DETAILED DATA FOR GAIT AND MOTION ANALYSIS



MoveSole Research is a mobile measurement system for instant underfoot force measurements during gait and motion.

Following data is included:

- An individual force curve from each sensor
- An estimated total force curve

MoveSole Research enables to view each step's data in detail and provides extensive amount of information about what is measured on each sensor.



# MOVESOLE RESEARCH:

## COMBINATION OF HIGH-END LABORATORY TOOLS

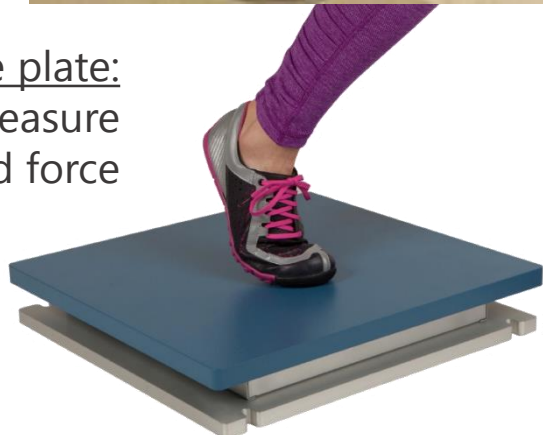
### Pressure mat:

A method to measure pressure distribution in a clinic



### Force plate:

An installed tool to measure total ground force



**LABORATORY LEVEL MEASUREMENTS**  
*within individuals' normal environment:*

**MOBILE AND INTEGRATED SOLUTION**  
*for total ground force and pressure distribution measurement*





# OBJECTIVE DATA FOR EXERCISE AND TRAINING

## MOVESOLE MOBILE MEASUREMENT DEVICE

### PREVENTING SPORTS RELATED INJURIES

There is too much strain in your knee when you are in a normal position.

It's important to find optimal positions while in motion in order to prevent injuries.



### FINALIZING THE TECHNIQUE

Measurements to monitor and support training can be implemented both in a laboratory and a natural environment.



### FOLLOW-UP THE REHABILITATION

Your balance does not hold until the end of training session.

Monitoring the optimal position during performance when proceeding with the rehabilitation.



# MOVESOLE RESEARCH



MoveSole Research provides detailed step data for deep analysis when every step counts.

- ✓ enables *mobile motion measuring* as it accompanies the user while on move
- ✓ is designed for *professionals* within healthcare and sports
- ✓ is to *visualize the measurement data* for analysis including
  - a total force curve and
  - force curves per each sensor.

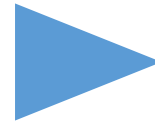
# MOVESOLE RESEARCH

## STEP AND MOTION DATA WIRELESSLY FOR DEEP ANALYSIS

100 Hz sampling rate from each of the seven sensors.



MoveSole Research Smart Insole collects the step data during a measurement session.



MoveSole Smart Insoles send the step data to MoveSole application

Measurement results can be shared in any tool or application according to the user's wishes.

# MOVESOLE RESEARCH

## MOVESOLE APPLICATION

### COMBINED FORCE – LEFT & RIGHT

26	2	0	2	79940
191	5	0	5	79941
206	8	0	8	79942
214	12	0	12	79943
221	17	0	17	79944
236	21	0	21	79945
244	26	0	26	79946
251	31	0	31	79947
267	35	0	35	79948
274	39	0	39	79949
289	41	0	41	79950
334	39	0	39	79954

### SENSOR FORCE – LEFT & RIGHT

26	0	0	0	0	0	0	1	79940
190	0	0	0	0	0	0	2	79941
205	0	0	0	0	0	0	4	79942
213	0	0	0	0	0	0	6	79943
221	0	0	0	0	0	0	9	79944
236	0	0	0	0	0	0	11	79945
243	0	0	0	0	0	0	13	79946
251	0	0	0	0	0	0	16	79947
266	0	0	0	0	0	0	18	79948
273	0	0	0	0	0	0	20	79949
288	0	0	0	0	0	0	21	79950
333	0	0	0	0	0	0	20	79954





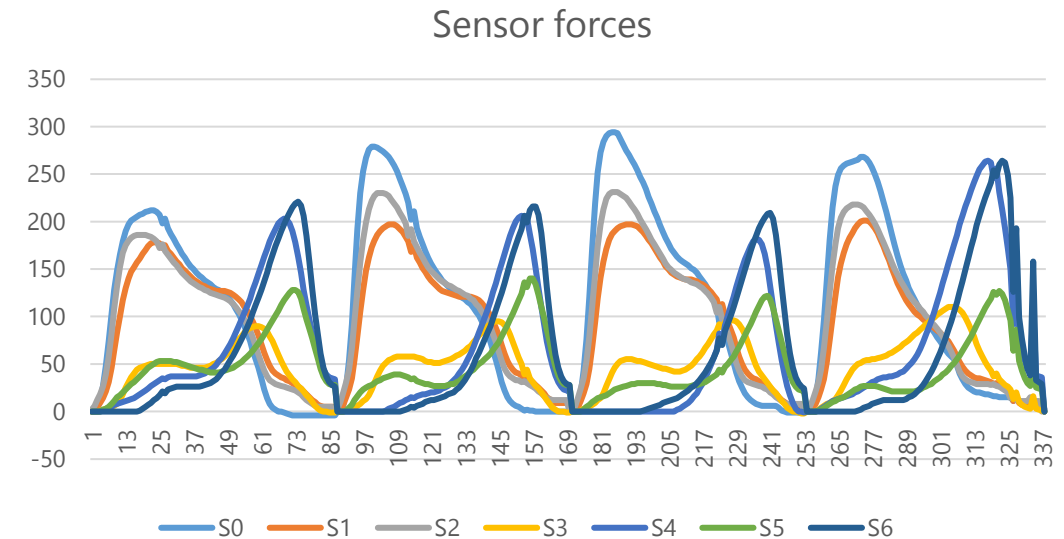
# MEASUREMENT RESULTS – INDIVIDUAL SENSORS

## MOVESOLE APPLICATION

Time stamp 1	S0	S1	S2	S3	S4	S5	S6	Time stamp 2
4099	0	0	2	0	0	0	0	12344977
4111	0	1	6	0	0	0	0	12345013
4260	2	5	12	0	0	0	0	12345014
4272	11	9	18	1	0	0	0	12345015
4285	27	14	26	2	1	2	0	12345016
4297	48	21	39	3	2	3	0	12345017
4312	74	31	58	4	4	5	0	12345018
4322	103	46	82	5	5	8	0	12345019
4334	128	64	108	6	7	11	0	12345020
4347	148	83	132	8	8	15	0	12345021
4359	165	100	152	12	9	17	0	12345022
4372	179	117	167	18	10	20	0	12345023
4384	190	130	175	25	11	23	0	12345024
4397	197	140	180	31	12	26	0	12345025
4410	201	147	183	36	13	29	0	12345026
...	...	...	...	...	...	...	...	...

The total amount of data is 525 samples.

Timestamp1: Time from start of the measurement session (msec) in MoveSole application.  
Timestamp2: Sample number



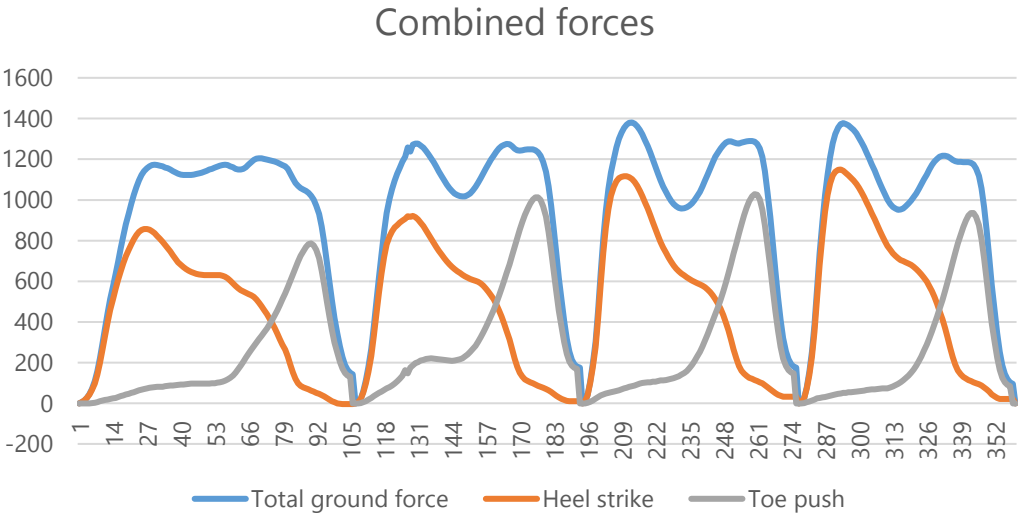
Separate force curves can be viewed from each of the seven sensors.

# MEASUREMENT RESULTS – TOTAL FORCE CURVE

## MOVESOLE APPLICATION

Time stamp 1	Total ground force	Heel strike	Toe push	Time stamp 2
2513	0	0	0	12344829
2688	5	5	0	12344872
2850	14	14	0	12344873
2862	26	26	0	12344874
2874	45	42	0	12344875
2888	71	65	1	12344876
2893	109	97	3	12344877
2899	158	141	6	12344878
2913	221	198	10	12344879
2924	293	263	13	12344880
2939	369	332	17	12344881
2943	443	398	19	12344882
2950	512	459	22	12344883
2961	575	513	25	12344884
2989	635	562	27	12344885
...	...	...	...	...
The total amount of data is 525 samples.				

Timestamp1: Time from start of the measurement session (msec) in MoveSole application.  
 Timestamp2: Sample number

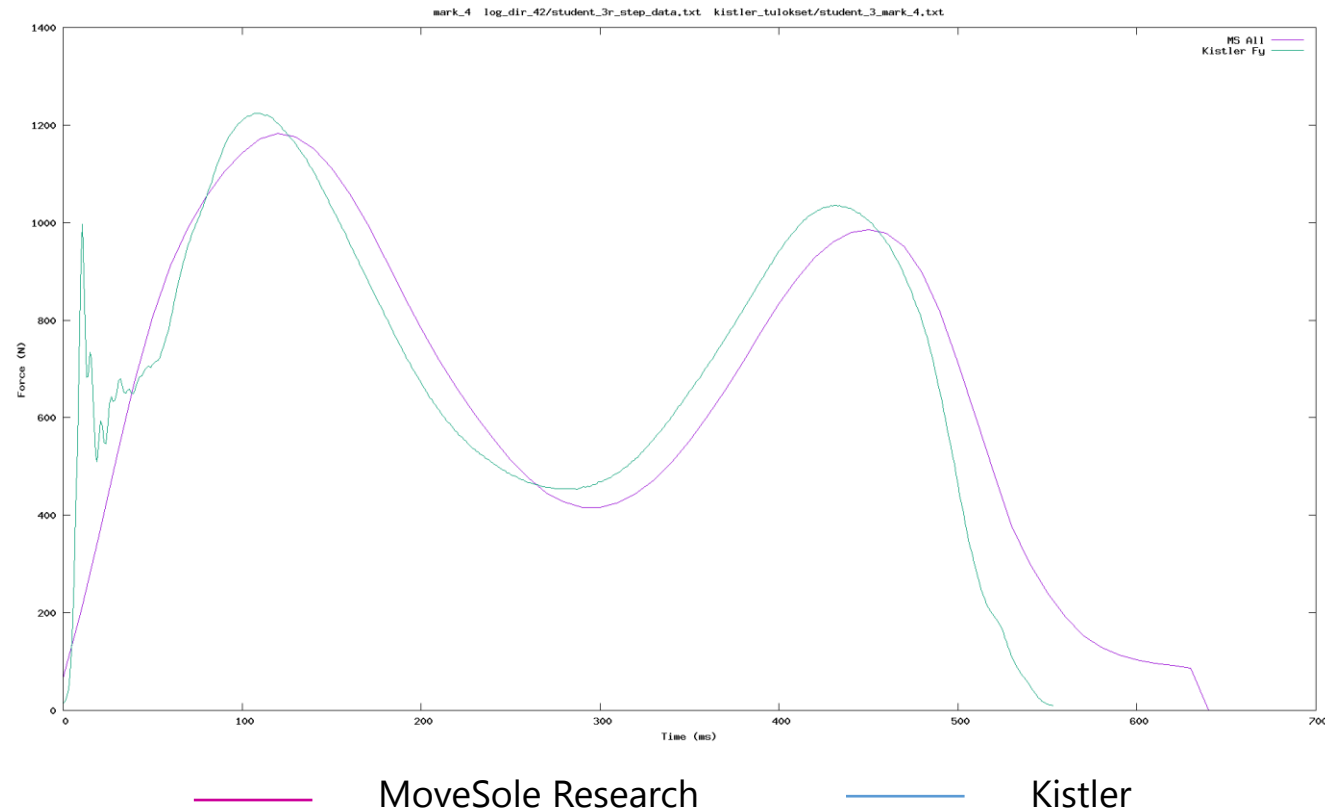


MoveSole Research provides access to an estimated total force curve.

# MOVESOLE RESEARCH

## MEASUREMENT RESULTS COMPARED WITH KISTLER

Total force curve  
measured with both  
Kistler and  
MoveSole Research.



# MOVESOLE RESEARCH: PRODUCT FEATURES

## TECHNOLOGICAL INNOVATION

- Sensor technology implemented in a new way
- Unique sensor technology combined with printed intelligence production methods

## MECHANICAL AND PHYSICAL DURABILITY

- Extensive process for choosing and accepting the final materials
- Endurance of the sensor material

## PRECISE MEASUREMENT RESULTS

- Tailored testing devices verified by an external actor
- Each Smart Insole calibrated before a delivery

MoveSole devices supported by a warranty:  
12 months or  
500 000 steps / pair of insoles







# MOVESOLE RESEARCH

## PACKAGE INCLUDES:

- MoveSole Research Smart Insoles  
6 pairs of insoles (sizes 36, 38, 40, 42, 44, 46)
- MoveSole Research application

### Accessories

- Coin cell battery, total 12 pieces
- Ankle band, total 12 pieces
- Screwdriver



## FURTHER INFORMATION:

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