

Nuove metodiche per il monitoraggio dei pazienti

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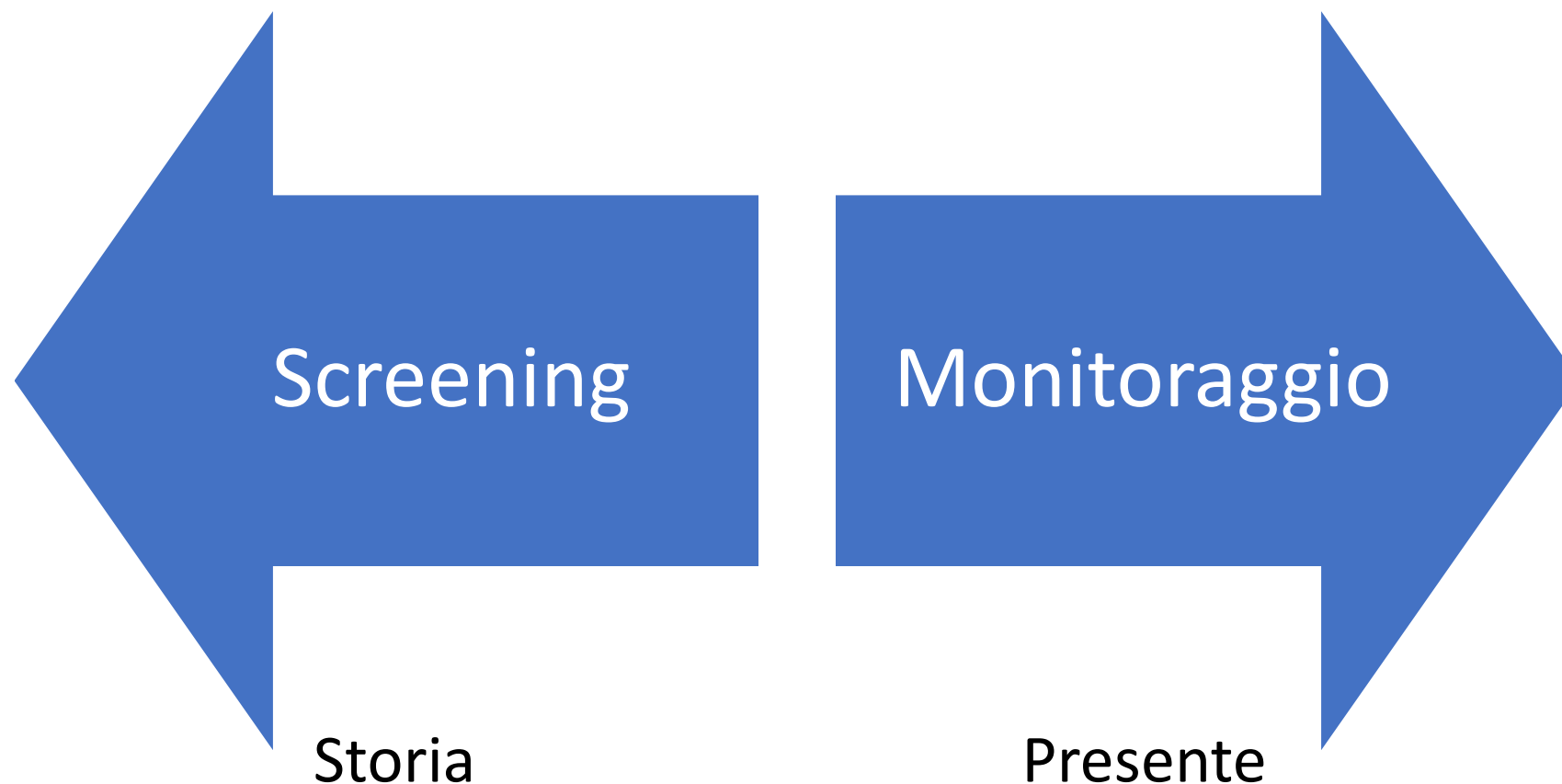
The poster features a large, stylized number '2023' on the left side, with the '2' in black and the '023' in blue. At the top right, there are logos for SID (Società Italiana di Diabetologia) and AMD (Associazione Medici Chirurghi). Below these, there are several colorful ovals in blue, light blue, orange, and yellow. The main text on the poster reads: 'ASSISI (PG) 15/17 GIUGNO 2023 Grand Hotel Assisi'. Below this, it says 'Congresso Nazionale PIEDE DIABETICO GDS SID-AMD'. There are three circular images: the top one shows a historic building in Assisi, the middle one shows a church tower, and the bottom one shows a large church facade. At the bottom, there is a large 'S' logo with a footprint inside, followed by the text: 'La sindrome del piede diabetico: competenze in azione con uno sguardo al futuro'.

ASSISI (PG)
15/17
GIUGNO 2023
Grand Hotel Assisi

Congresso Nazionale
PIEDE DIABETICO
GDS SID-AMD

La **S**indrome del **piede diabetico**:
competenze in azione
con uno sguardo
al futuro

Che cos'è il monitoraggio ?



Perché è necessario il monitoraggio?

- Ambiente Sanitario
- Invecchiamento della popolazione «Pazienti»
- Decisioni su evoluzione delle condizioni
- Miglioramento degli esiti e delle prestazioni cliniche

Epidemiologia del Piede Diabetico

- Tasso di incidenza del 19%-34% dei pazienti diabetici
- Tasso di Reulceraione 40% in 1aa, 65% in 3aa, 80% - 100% in 10aa



Esistono diverse tipologie di monitoraggio?

- Monitoraggio del percorso assistenziale
- Monitoraggio delle condizioni di rischio
- Monitoraggio delle terapie

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About
Screening**



**Get
Screened**



**Follow
Up and
Monitoring**



Requisiti essenziali per il monitoraggio?

- Formazione sanitaria specifica
- Tecnologia informatica
- Linguaggio comune



Podologi nel sistema sanitario nazionale

- Podologi coinvolti in tutti i momenti di malattia
- Focus su cura del piede e Wound care, meno su Biomeccanica.
- In Italia meno di 100 assunti e molti part-time
- Prestazione refertata



Podologi sul Territorio



- Coinvolti in Prevenzione e Remissione, meno in Fase Acuta
- Messa in opera di tutte le competenze
- Non uniformità di conoscenze su PD
- Prestazione non sempre refertata

Classificazione in Fase acuta

Table 2: SINBAD system

Category	Definition	Score
Site	Forefoot	0
	Midfoot and hindfoot	1
Ischemia	Pedal blood flow intact: at least one palpable pulse	0
	Clinical evidence of reduced pedal flow	1
Neuropathy	Protective sensation intact	0
	Protective sensation lost	1
Bacterial infection	None	0
	Present	1
Area Ulcer	Ulcer < 1 cm ²	0
	Ulcer ≥ 1 cm ²	1
Depth	Ulcer confined to skin and subcutaneous tissue	0
	Ulcer reaching muscle, tendon or deeper	1
Total possible score		0 – 6

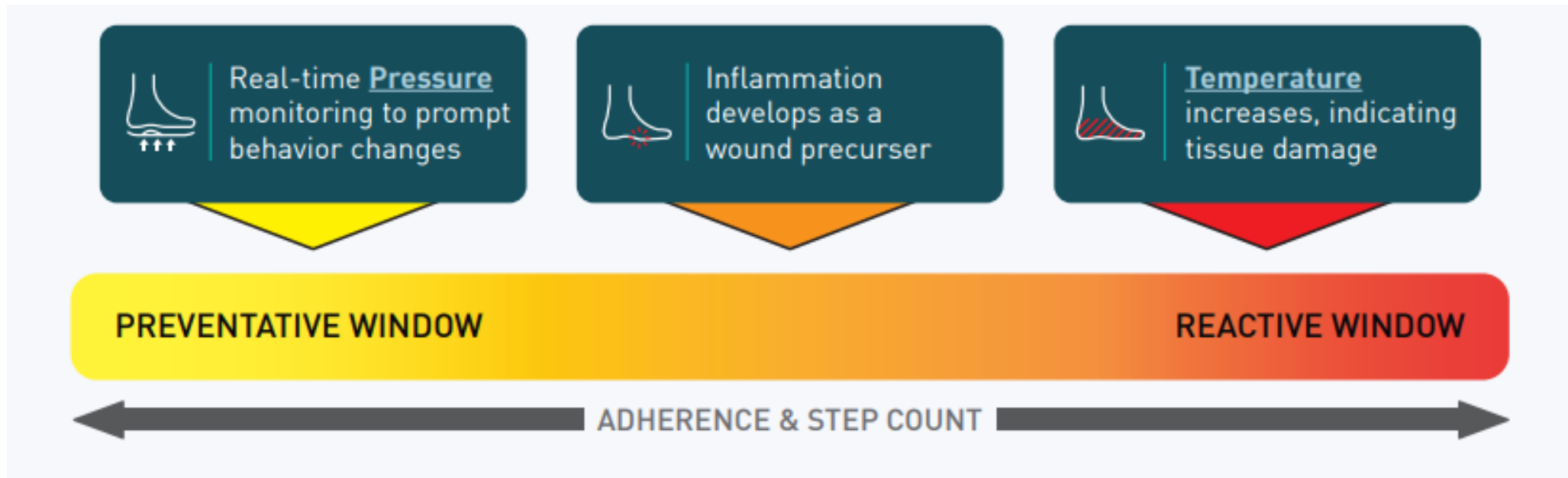
Classificazione Prevenzione/Remissione

Table 1: The IWGDF Risk Stratification System and corresponding foot screening and examination frequency

Category	Ulcer risk	Characteristics	Frequency*
0	Very low	No LOPS and No PAD	once a year
1	Low	LOPS or PAD	once every 6-12 months
2	Moderate	LOPS + PAD, or LOPS + foot deformity or PAD + foot deformity	once every 3-6 months
3	High	LOPS or PAD, and one or more of the following: • history of a foot ulcer • a lower-extremity amputation (minor or major) • end-stage renal disease	once every 1-3 months

Note: LOPS = Loss of protective sensation; PAD = peripheral artery disease. *: Screening frequency is based on expert opinion, since no evidence is available to support these intervals. When the screening interval is close to a regular diabetes check-up, consider screening the foot at that check-up.

Quali sono i parametri che ci interessa monitorare nella gestione del Piede Diabetico?



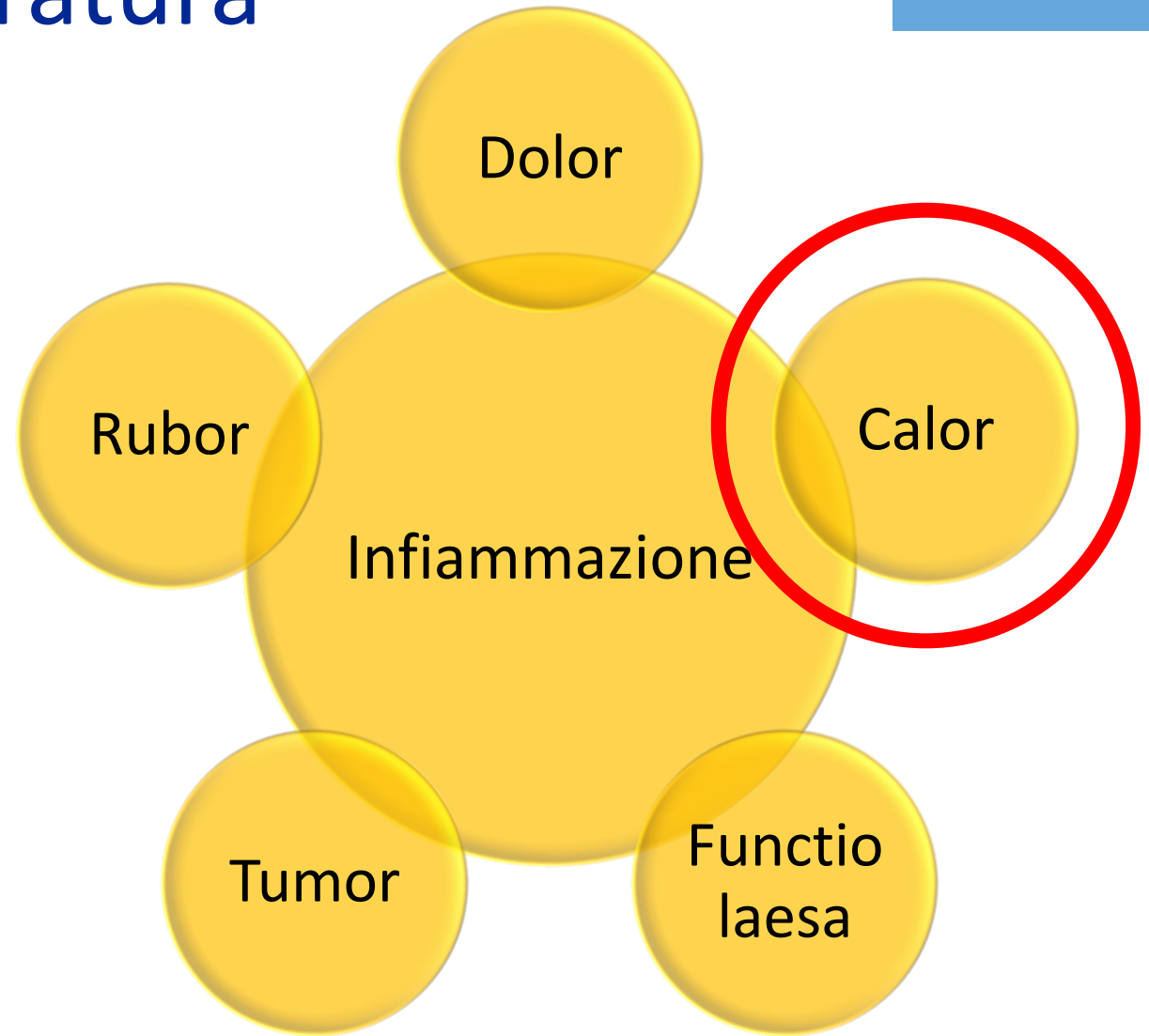
Caroline A Abbott, Katie E Chatwin, Philip Foden, Ahmad N Hasan, Chandbi Sange, Satyan M Rajbhandari, Prabhav N Reddy, Loretta Vileikyte, Frank L Bowling, Andrew J M Boulton, Neil D Reeves,
Innovative intelligent insole system reduces diabetic foot ulcer recurrence at plantar sites: a prospective, randomised, proof-of-concept study, The Lancet Digital Health, Volume 1, Issue 6, 2019, Pages e308-e318, ISSN 2589-7500, [https://doi.org/10.1016/S2589-7500\(19\)30128-1](https://doi.org/10.1016/S2589-7500(19)30128-1).

Temperatura



La cute prima si scalda e
poi si lesione

Bergtholdt, H. T. and Brand, P. W. (1975). Thermography:
an aid in the management of insensitive feet and
stumps. *Arch. Phys. Med. Rehab.*, 56, 205–209.



Temperatura

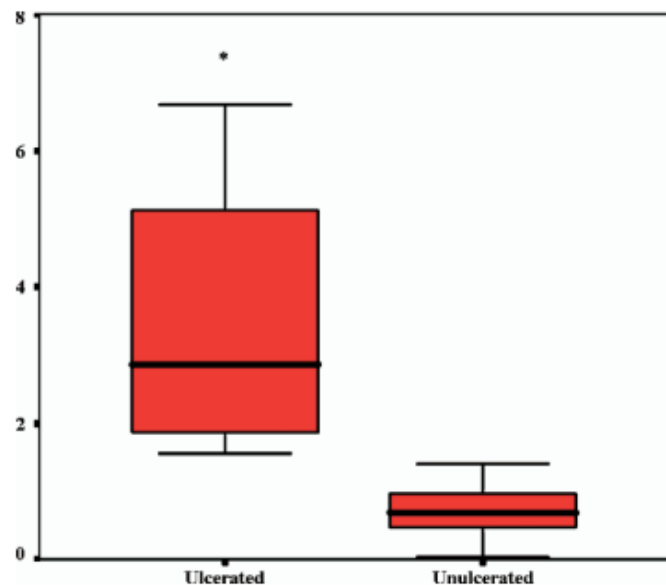
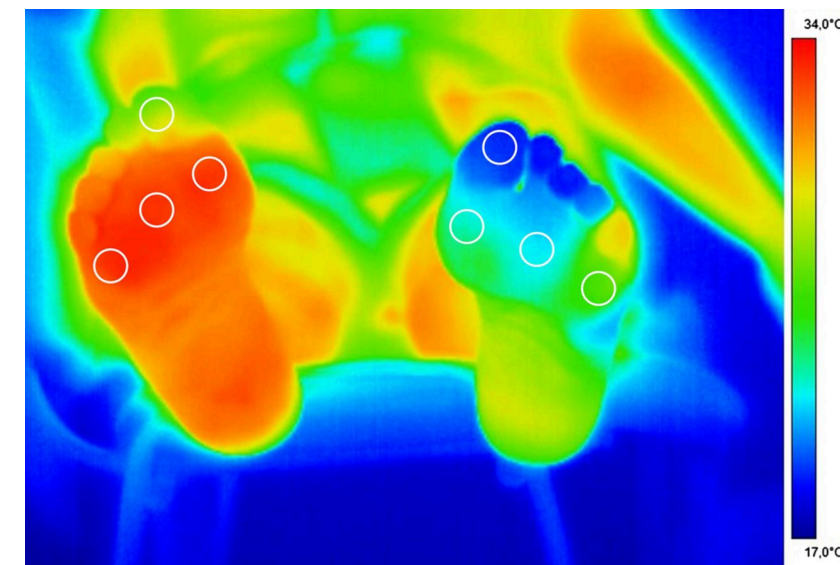
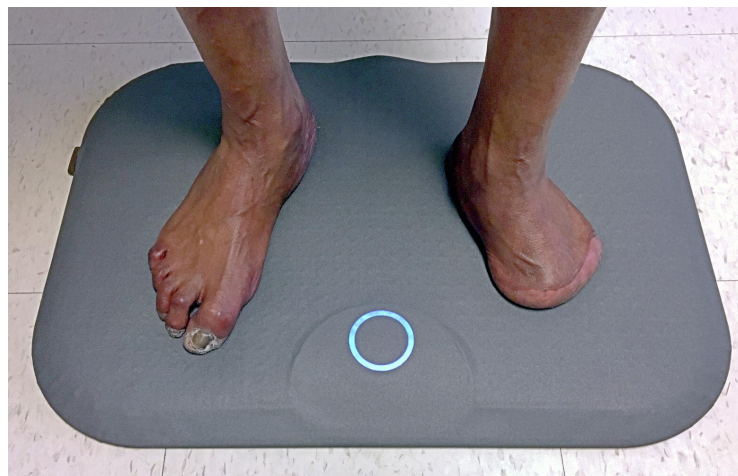


Figure 2 Temperature difference at 1 week before ulceration.
* $P = .001$.



Skin Temperature Monitoring Reduces the Risk for Diabetic Foot Ulceration in High-risk Patients
David G. Armstrong, DPM, PhD,^a Katherine Holtz-Neiderer, DPM,^b Christopher Wendel, MS,^b M. Jane Mohler, PhD,^{b,c} Heather R. Kimbriel,^b Lawrence A. Lavery, DPM, MPH^d
Scholl's Center for Lower Extremity Ambulatory Research (CLEAR), Rosalind Franklin University of Medicine and Science, North Chicago, Ill; ^b

Ian L. Gordon, Gary M. Rothenberg, Brian D. Lepow, Brian J. Petersen, David R. Linders, Jonathan D. Bloom, David G. Armstrong, Accuracy of a foot temperature monitoring mat for predicting diabetic foot ulcers in patients with recent wounds or partial foot amputation, Diabetes Research and Clinical Practice, Volume 161, 2020, 108074, ISSN 0168-8227, <https://doi.org/10.1016/j.diabres.2020.108074>.

Calze Smart

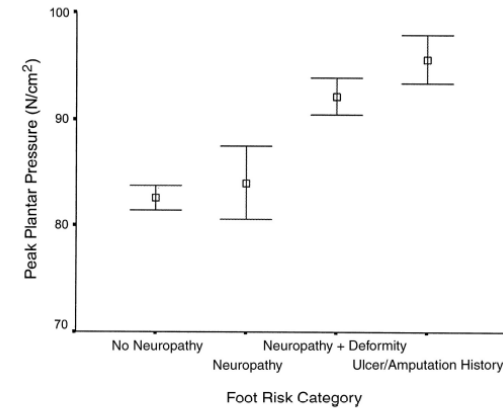
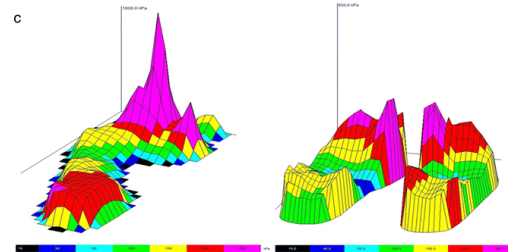


- Alto livello di utilizzo e di compliance del paziente
- Misurano la temperature in tempo reale

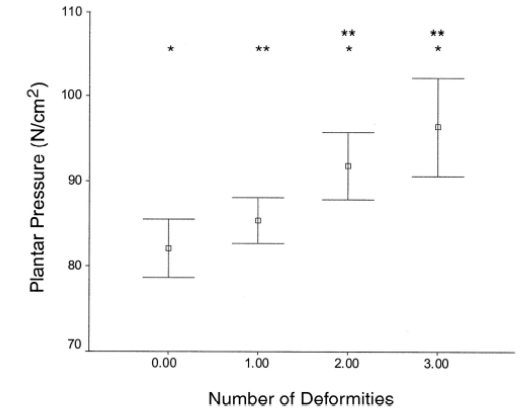
Reyzelman AM, Koelewyn K, Murphy M, Shen X, Yu E, Pillai R, Fu J, Scholten HJ, Ma R. Continuous Temperature-Monitoring Socks for Home Use in Patients With Diabetes: Observational Study. J Med Internet Res. 2018 Dec 17;20(12):e12460. doi: 10.2196/12460. PMID: 30559091; PMCID: PMC6315272.

Scholten HJ, Shih CD, Ma R, Malhotra K, Reyzelman AM. Utilization of a Smart Sock for the Remote Monitoring of Patients With Peripheral Neuropathy: Cross-sectional Study of a Real-world Registry. JMIR Formative Research. 2022 Mar;6(3):e32934. DOI: 10.2196/32934. PMID: 35230248; PMCID: PMC8924773.

Pressione



(a) Peak pressure with respect to foot risk category. Increasing foot risk is directly reflected in increase of plantar foot pressure.

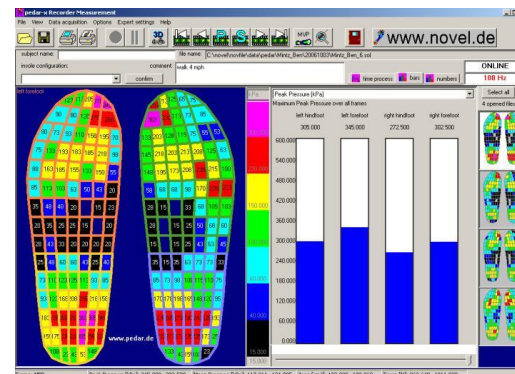


(b) Effect of forefoot deformity on plantar pressure. It can be seen that increased number of deformities strongly co-relates with increased plantar pressure.

Figure 3.2: Relation between pressure, foot risk and foot deformity (adopted from Lavery et al. (2003))



(b) Equipment mounted on the subject



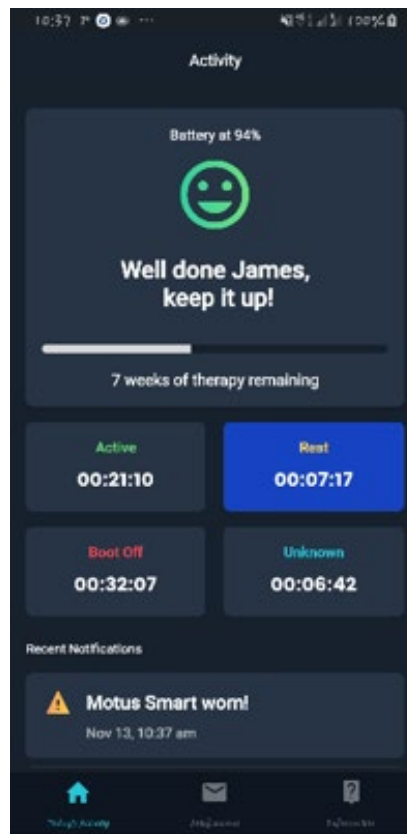
...la biomeccanica del piede cambia all'interno della calzature...
 Waaijman et al. (2014)

Ortesi plantari smart



Caroline A Abbott, Katie E Chatwin, Philip Foden, Ahmad N Hasan, Chandbi Sange, Satyan M Rajbhandari, Prabhav N Reddy, Loretta Vileikyte, Frank L Bowling, Andrew J M Boulton, Neil D Reeves,
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Adesione alla terapia ortesica



Pathophysiology/Complications

ORIGINAL ARTICLE

Adherence to Wearing Prescription Custom-Made Footwear in Patients With Diabetes at High Risk for Plantar Foot Ulceration

ROELOF WAAIJMAN, MSc¹
RENSKE KEUKENKAMP, MSc¹
MIRJAM DE HAART, MD, PhD¹

WOJTEK P. POLOMSKI, MD²
FRANS NOLLET, MD, PhD¹
SICCO A. BUS, PhD^{1,3}

shown that ulcer recurrence rate can be substantially reduced when patients adhere to wearing pressure-relieving foot-

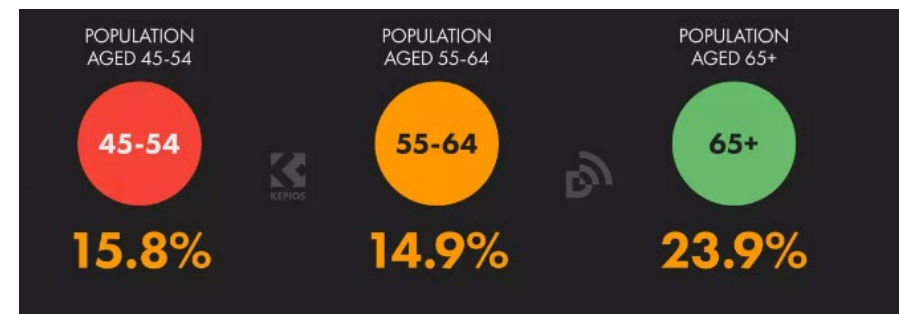
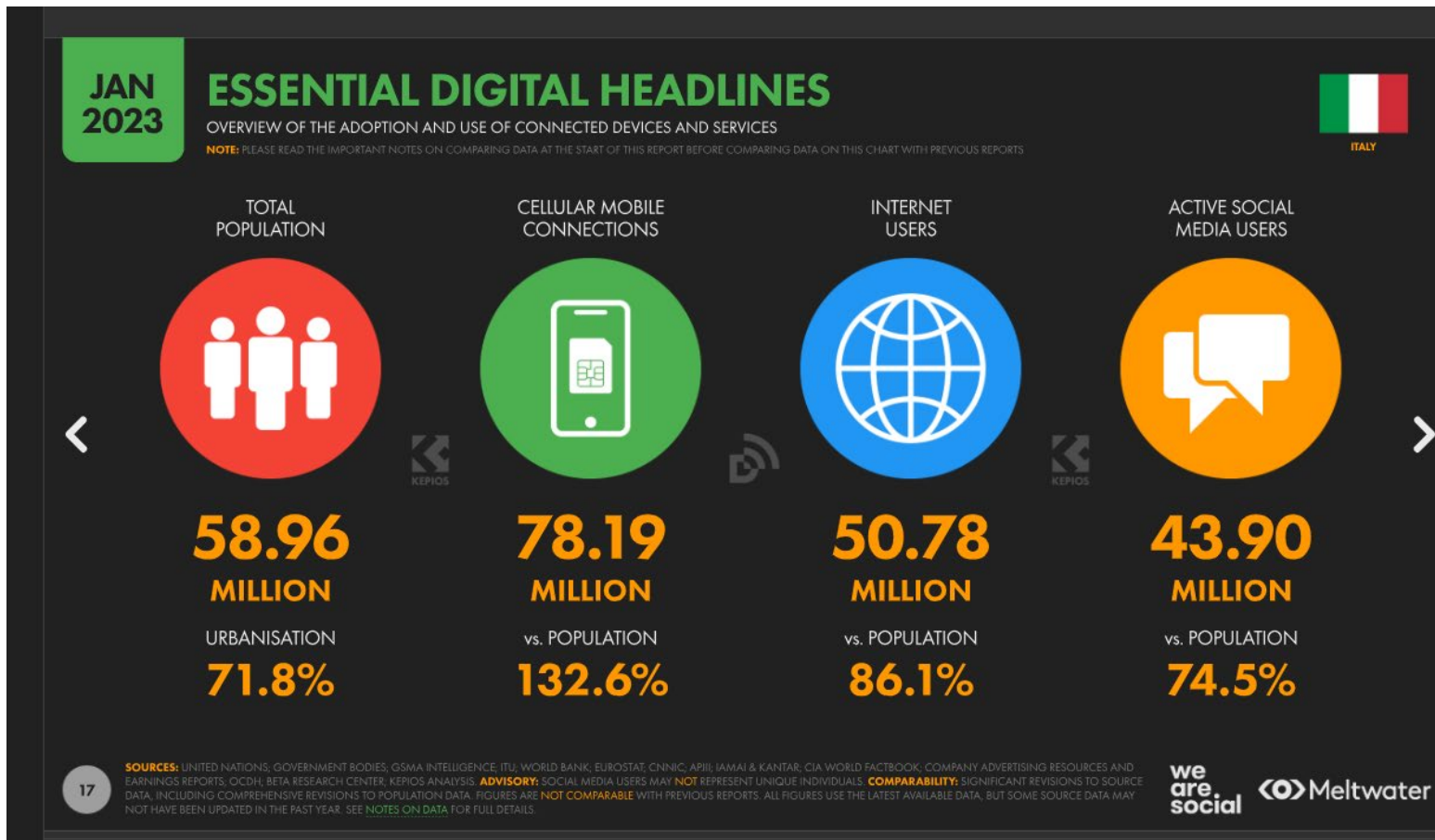
Clinical Research

Custom-Made Orthosis and Shoes in a Structured Follow-Up Program Reduces the Incidence of Neuropathic Ulcers in High-Risk Diabetic Foot Patients

The International Journal of Lower
Extremity Wounds
11(1) 59-64
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sagepub.com/journalsPermissions.nav
DOI: 10.1177/1534734612438729
http://lhw.sagepub.com
SAGE

Loredana Rizzo, MD¹, Anna Tedeschi, MD¹, Eliana Fallani, OT¹, Alberto Coppelli, MD¹,
Valerio Vallini, MD¹, Elisabetta Iacopi, MD¹, and Alberto Piaggese, MD¹

L'uso della Tecnologia Informatica in Italia



L'uso della Tecnologia nella popolazione Over 50

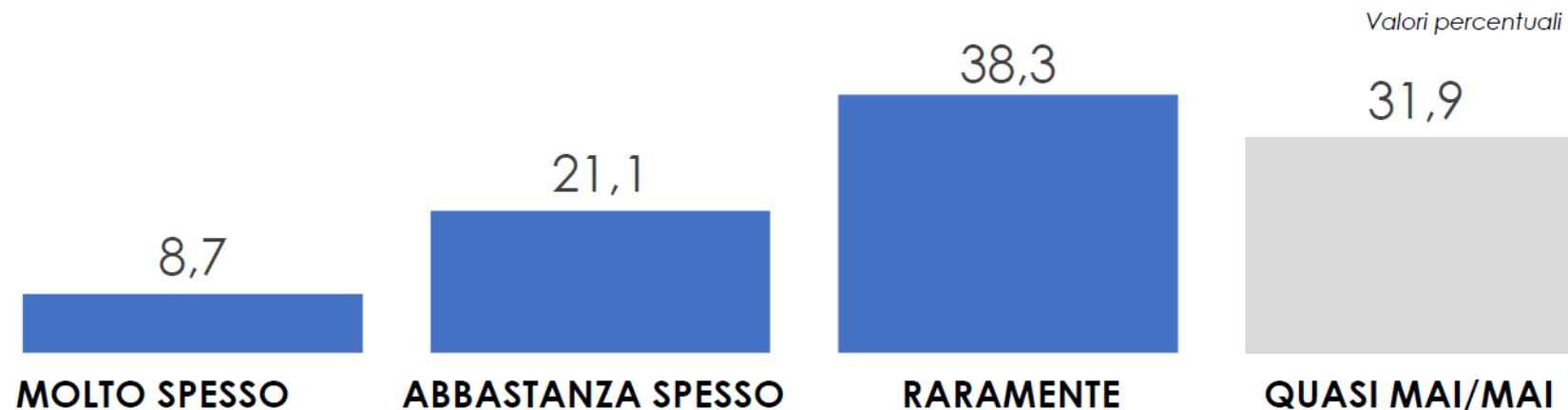
- 84,7% Possiede Smartphone con accesso ad internet
- 61,2 % possiede un PC
- 8,4% Smartwatch
- 21,2% Tablet



L'uso della Tecnologia nella popolazione Over 50

- 61,8% degli over 50 riscontra criticità se trova anglicismi

(Solo coloro che possiedono uno smartphone, un computer o un tablet) Le capita di avere difficoltà quando, utilizzando dispositivi quali smartphone, computer o tablet trova degli "anglicismi" o definizioni tecniche nelle attività che compie o nelle pagine che visita?



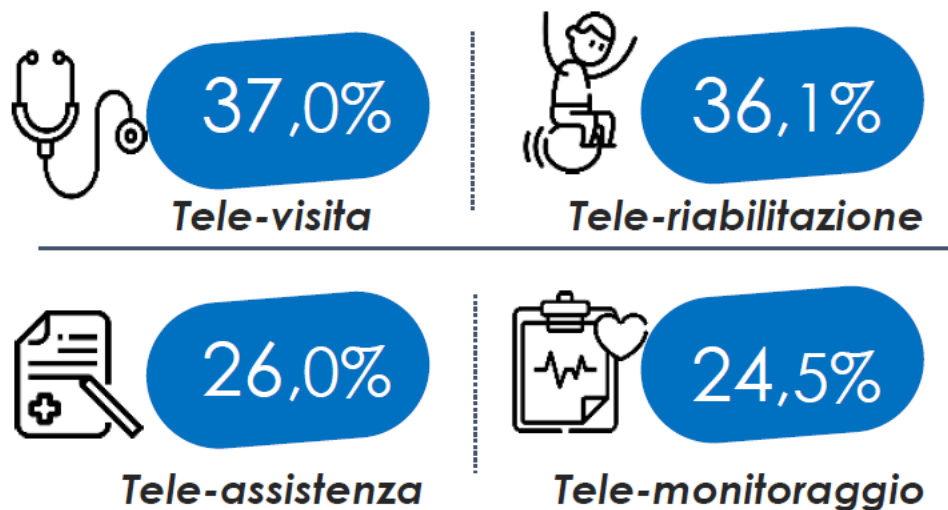
La cura a distanza

- Il 52% degli over 50 ha interagito a distanza, durante la pandemia con il proprio medico in prevalenza attraverso il telefono.



Il Servizio di Tele Medicina

- Tra gli over 50 che hanno indicato di avere usufruito dei sistemi di telemedicina (sono il 5,9%) i servizi maggiormente utilizzati sono risultati: la tele-visita e la tele-riabilitazione..



Possibili Soluzioni

Database condiviso

App

Fascicolo Sanitario Elettronico
Tecnologia indossabile

Telemedicina



Conclusioni

- Stabilire le priorità
- Aumentare gli investimenti
- Migliorare la comunicazione inter-professionale e con i pazienti/care givers

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