

Druck ist nicht Fluss Mikrozirkulation

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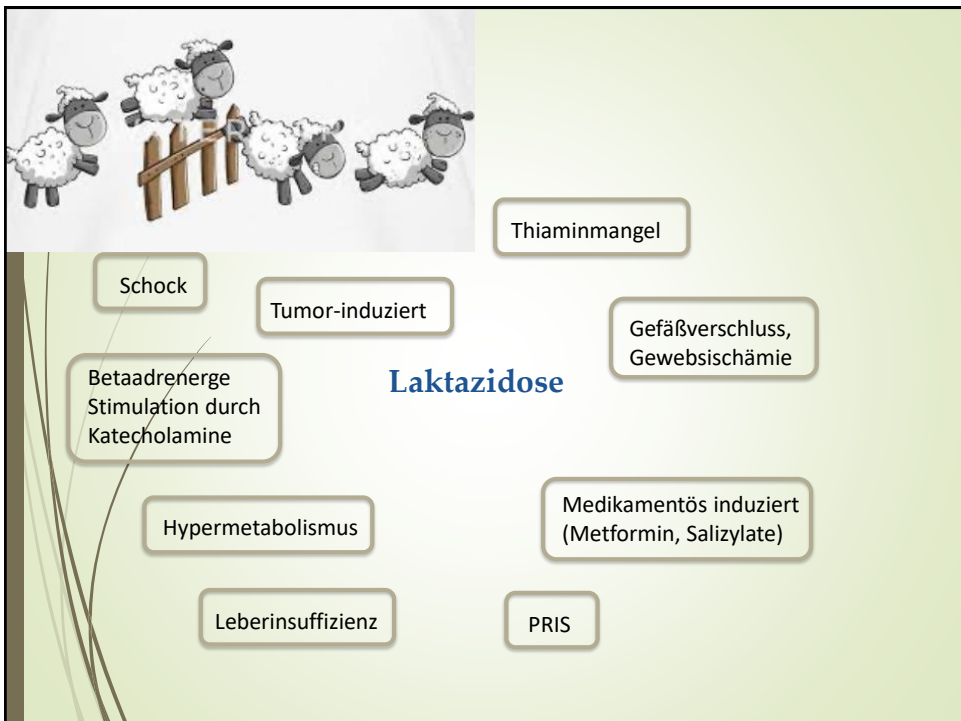


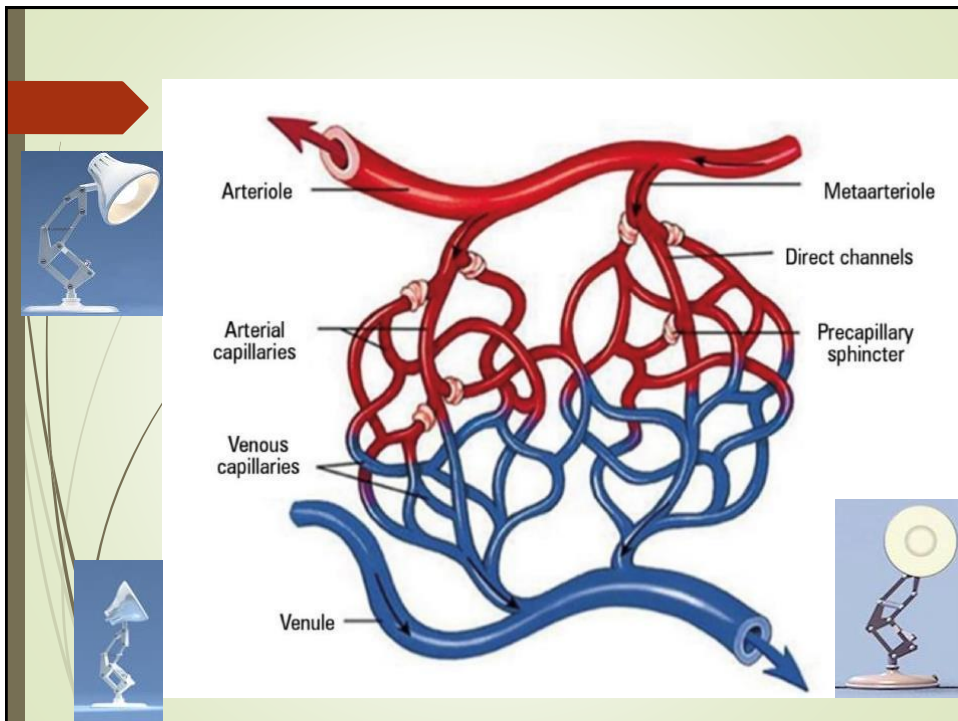
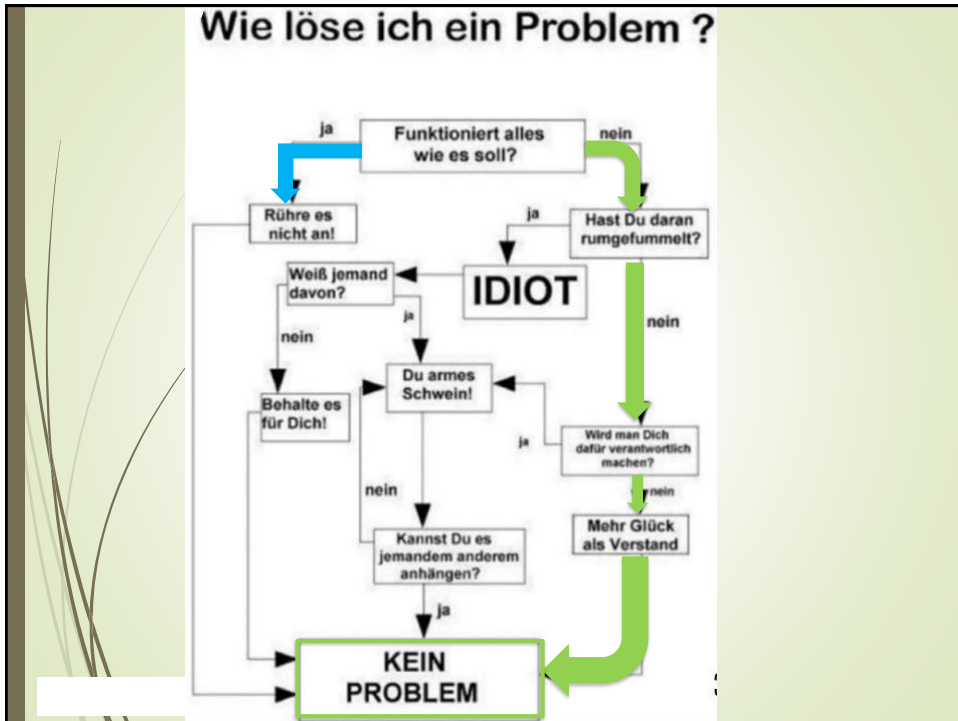
No conflict of interest exists



The Lacto-Bolo reflex: a well-known pathological reflex observed in the majority of house staff and a large portion of attending physicians. It involves the reflexive administration of IV crystalloid in response to a serum lactate above what is considered normal. Also known as Lacto-Crystalis, Lacto-Saline, and even Lacto-Lactated (ringers) reflex.

4.5 ▲	4.2 ▲	1.39 ▲	4.7 ▲	4.6 ▲
1.06 ▲	1.17 ▲	4.9 ▲	1.09 ▲	1.07 ▲
98 ▲	105 ▲	1.07 ▲	108 ▲	108 ▲
214 ▲	89 ▲	106 ▲	89 ▲	124 ▲
2.2 ▲	3.5 ▲	340 ▲	5.4 ▲	5.7 ▲
		4.0 ▲		





Mottling score und CRT

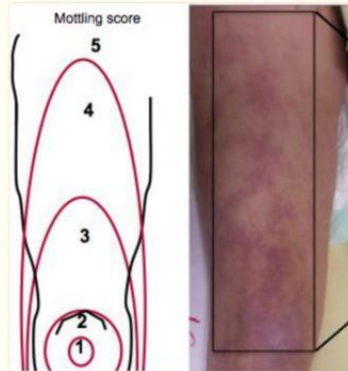


Figure 1

Mottling score is based on mottling area extension on legs. Score 0, no mottling; score 1, modest mottling area (coin size) localized to the center of the knee; score 2, moderate mottling area that does not exceed the superior edge of the kneecap; score 3, mild mottling area that does not exceed the middle thigh; score 4, severe mottling area that does not exceed the fold of the groin; and score 5, extremely severe mottling area that exceeds the fold of the groin. The area of laser Doppler scanning was superposed to the area of mottling score

Ait-Oufella, Ann Intensive Care, 2013

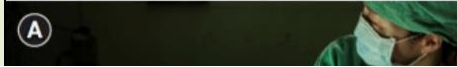
SvO₂; Lactat, PCO₂ gap

Summary of the clinical use of selected biochemical parameters of global oxygen (O₂) metabolism for the assessment of microcirculation and tissue perfusion

Parameter	Clinical application as a marker	Cut-off value(s)
S _v O ₂	Hypoxia	< 65%
	Extraction O ₂ from hemoglobin	> 80%
	Microcirculation and cell failure (high S _v O ₂)	
Lactate	Hypoxia	> 2 mmol/l
	Anaerobic metabolism	
	Strongest data for GDT	
	Also detects local hypoxia	
PCO ₂ gap	Venous return—perfusion	> 0.8 kPa
		(> 6 mmHg)

Janotka, Mol Cell Biochem., 2021

Mikroskopie der sublingualen Mikrozirkulation

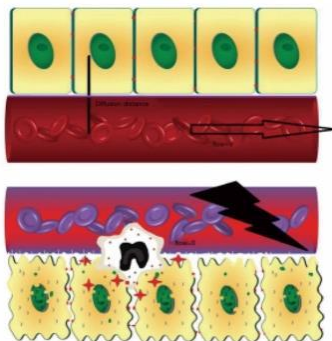


> *Intensive Care Med.* 2018 Mar;44(3):281-299. doi: 10.1007/s00134-018-5070-7.
Epub 2018 Feb 6.

Second consensus on the assessment of sublingual microcirculation in critically ill patients: results from a task force of the European Society of Intensive Care Medicine

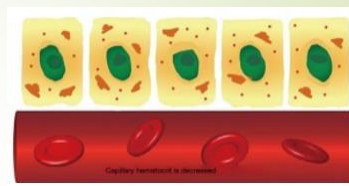
Can Ince ^{1, 2}, E Christiaan Boerma ³, Maurizio Cecconi ⁴, Daniel De Backer ⁵,

Typ 1: heterogener Fluss

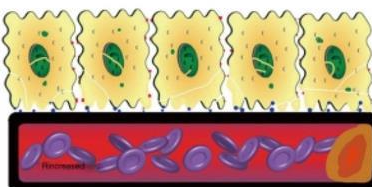


Formen der Mikrozirkulationsstörung

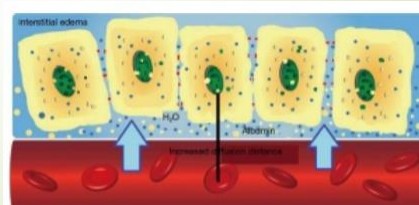
Typ 2: Hämodilution



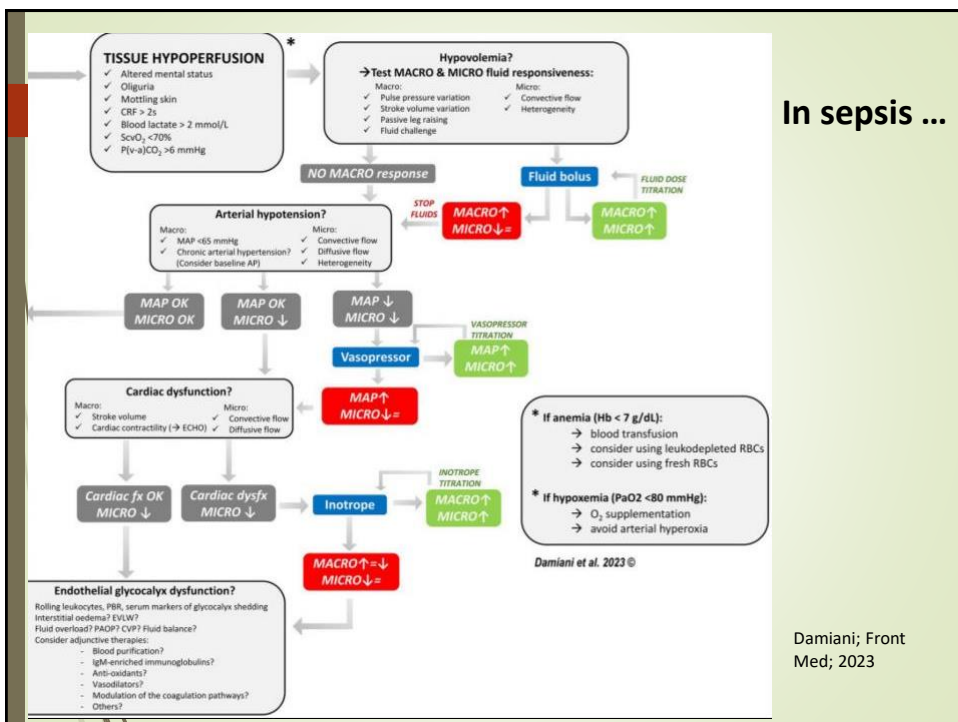
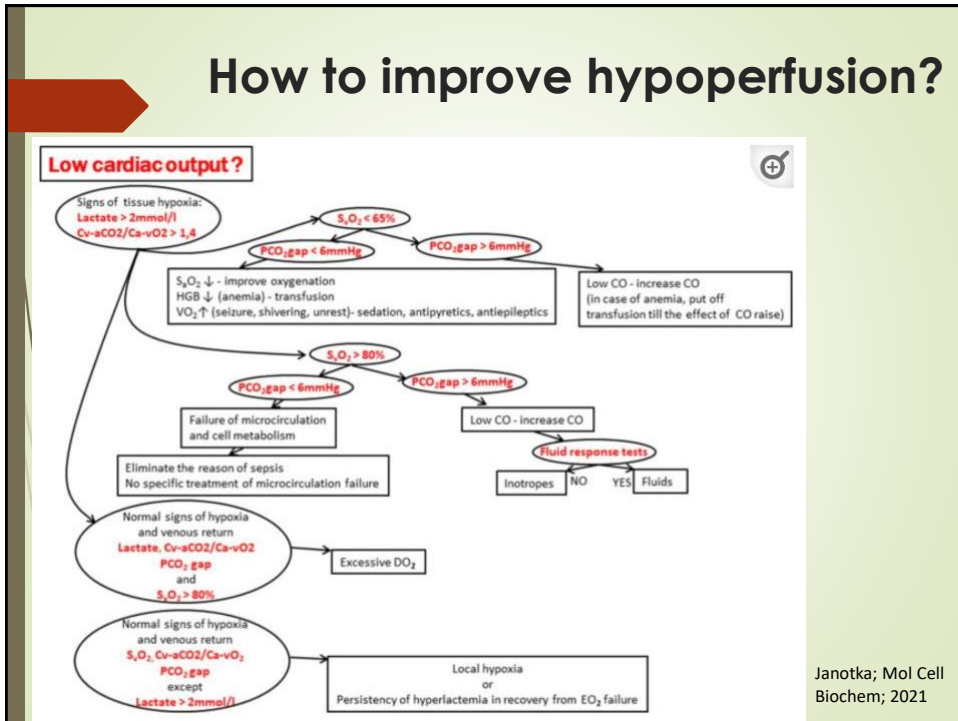
Typ 3: Vasokonstriktion/Tamponade



Typ 4: Gewebsödem



How to improve hypoperfusion?



Alternative Therapien (1)

> Crit Care Med. 2009 Apr;37(4):1341-7. doi: 10.1097/ccm.0b013e3181986647.

Effects of hydrocortisone on microcirculatory alterations in patients with septic shock

Gustavo Luiz Büchele¹, Eliézer Silva, Gustavo Adolfo Ospina-Tascón, Jean-Louis Vincent,

26.10.2011

[Crit Care](#), 2009; 13(Sup

PMCID: PMC2786114

Recombinant acti
oxygenation in se

[Abele Donati](#),⁰⁰¹ [Michel](#)

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Vitamin C improves microvascular reactivity and peripheral tissue perfusion in septic shock patients

[Jean-Rémi Lavillegrand](#),^{1,2} [Lisa Raja](#),¹ [Tomas Urbina](#),^{1,2} [Geoffroy Hariri](#),^{1,2} [Paul Gabarre](#),^{1,2} [Vincent Bonny](#),¹

Alternative Therapien (2)

Clinical Trial > [Blood Purif.](#) 2020;49(1-2):107-113. doi: 10.1159/000502540. Epub 2019 Aug 21.

Changes in Cytokines, Haemodynamics and Microcirculation in Patients with Sepsis/Septic Shock Undergoing Continuous Renal Replacement Therapy and Blood Purification with CytoSorb

Samuele Zuccari¹, Elisa Damiani¹, Roberta Domizi¹, Claudia Scorcella¹, Mario D'Arezzo²,

[Ann Intensive Care](#), 2019; 9: 135. Published online 2019 Dec 3. doi: 10.1186/s13613-019-0609-5

PMCID: PMC6890901 | PMID: [31797105](#)

IgM-enriched immunoglobulins (Pentaglobin) may improve the microcirculation in sepsis: a pilot randomized trial

[Roberta Domizi](#),¹ [Erica Adrario](#),¹ [Elisa Damiani](#),¹ [Claudia Scorcella](#),¹ [Andrea Carsetti](#),¹ [Paolo Giaccaglia](#),¹



To take home...

- ▶ Makrozirkulatorische Parameter als Therapieziel nicht ausreichend
- ▶ O₂ muss zu den Zellen
- ▶ Die Mikrozirkulation ist komplex,
- ▶ aber niemand hat gesagt, dass sie einfach ist.