Corso di Nefrologia

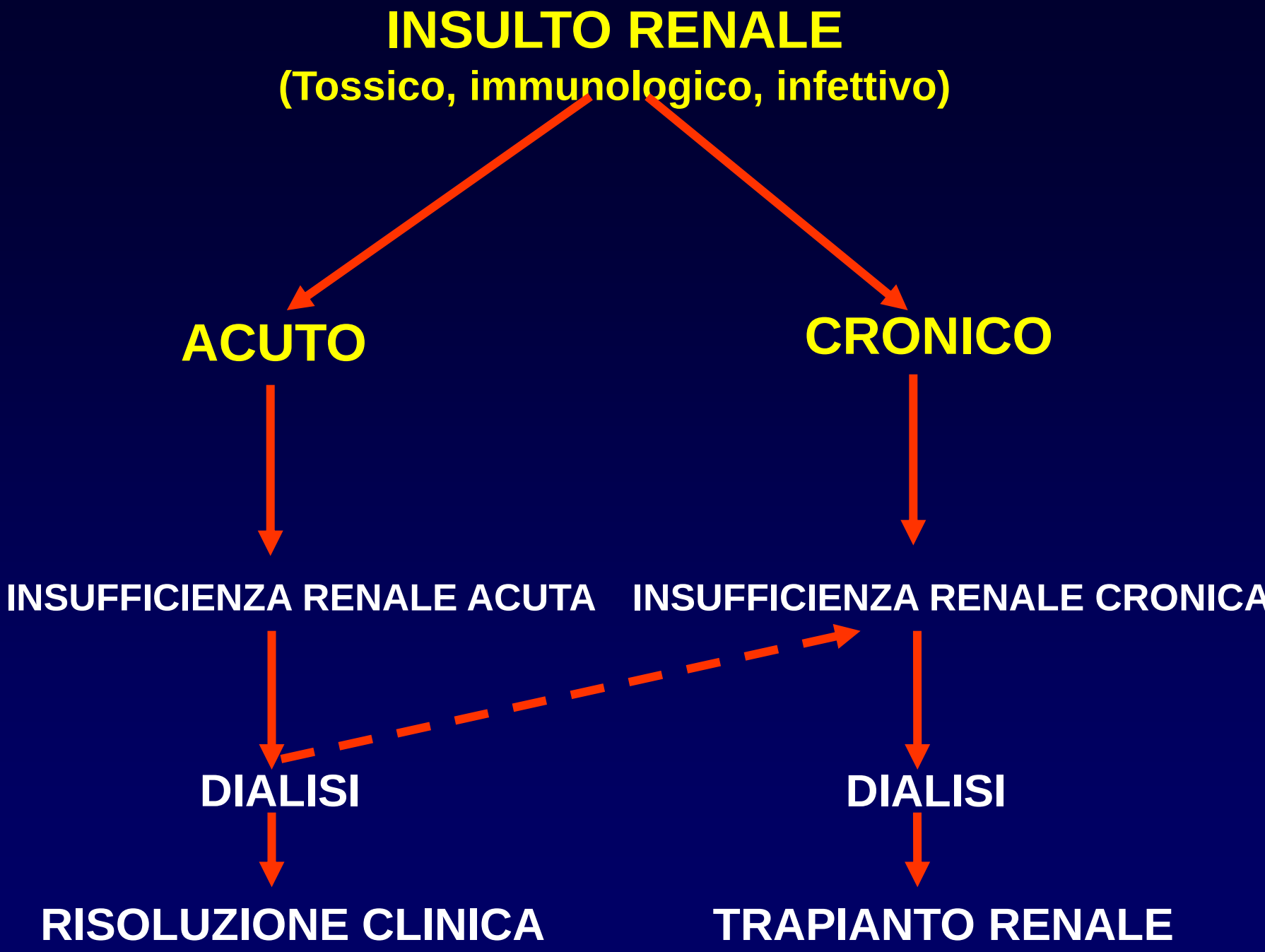
Corso di laurea

Triennale

INFERMIERISTICA

Prof. Carlo Manno

LA DIALISI E LE MEMBRANE DIALITICHE

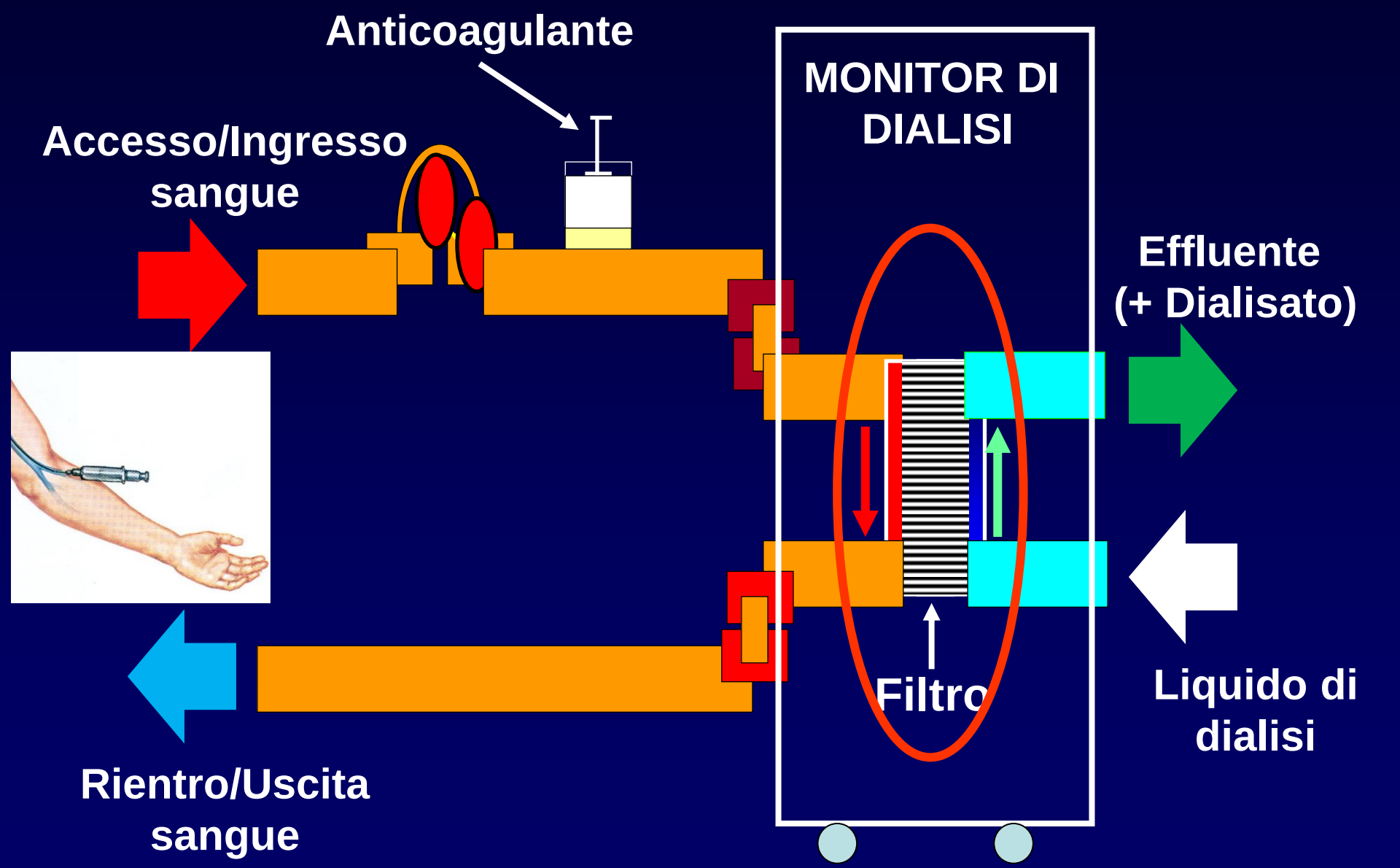

INSULTO RENALE
(Tossico, immunologico, infettivo)
ACUTO
CRONICO
INSUFFICIENZA RENALE ACUTA
INSUFFICIENZA RENALE CRONICA
DIALISI
DIALISI
RISOLUZIONE CLINICA
TRAPIANTO RENALE

IL DOPPIO “MIRACOLO” DELLA DIALISI

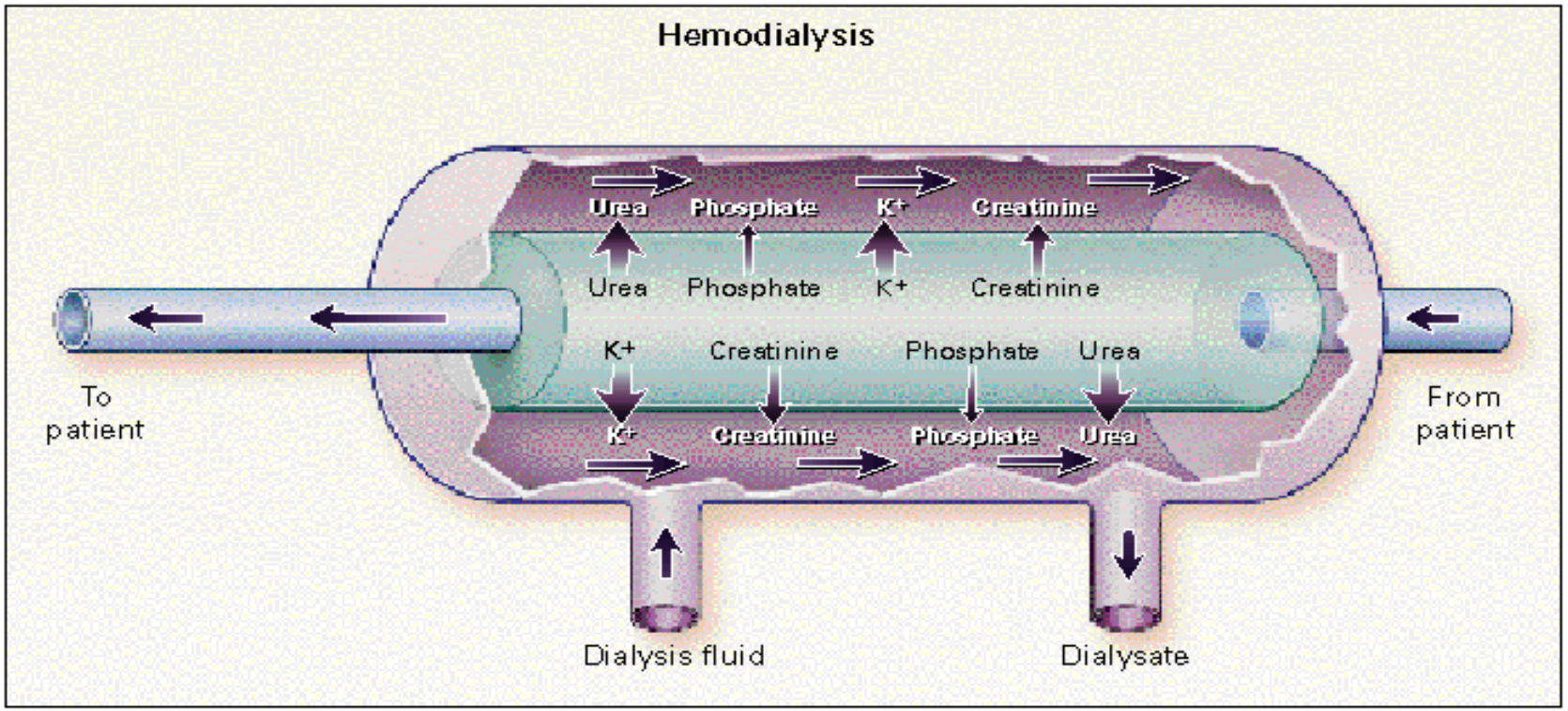
Mantiene in vita

Malato e Malattia

CIRCUITO DIALITICO



Le Membrane per emodialisi


Hemodialysis
Urea
Phosphate
K+
Creatinine
Urea
Phosphate
K+
Creatinine
K+
Creatinine
Phosphate
Urea
K+
Creatinine
Phosphate
Urea
To patient
From patient
Dialysis fluid
Dialysate

MECCANISMI ALLA BASE DEL PROCESSO DIALITICO:

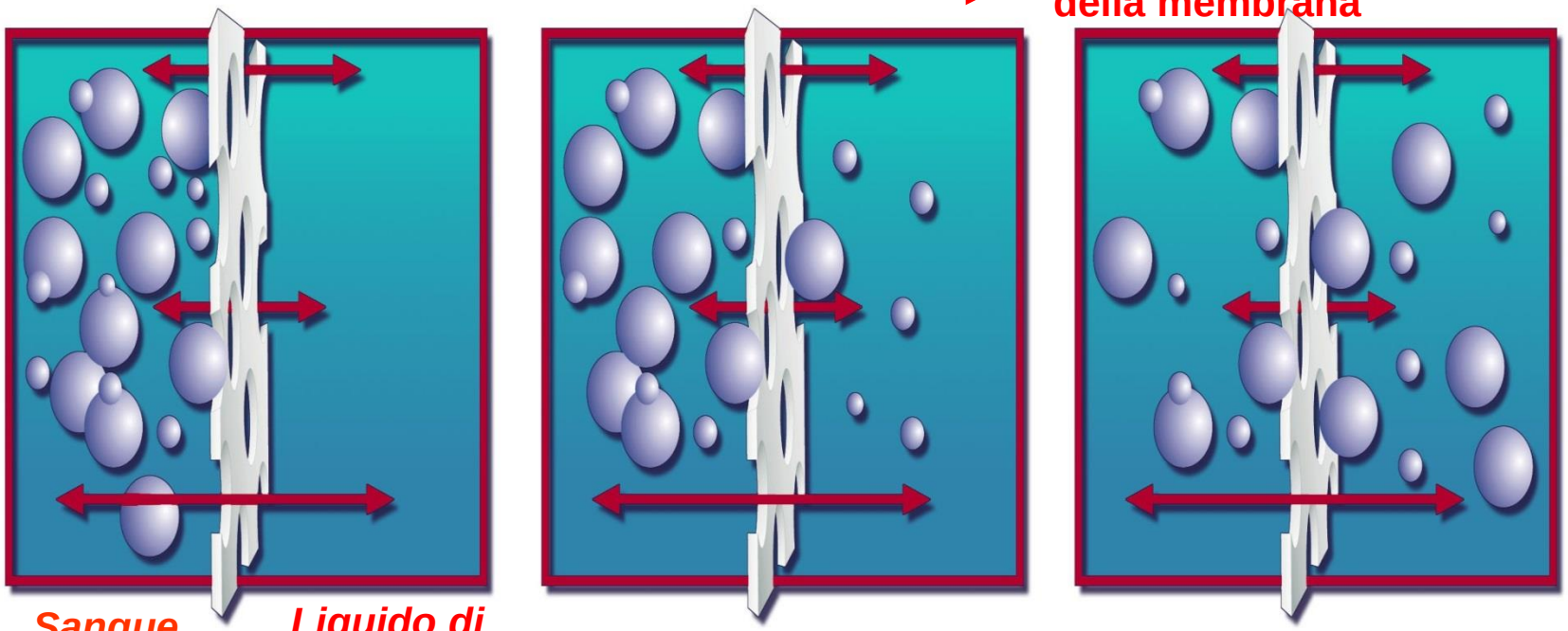
- *Diffusione*
- *Convezione*

DIFFUSIONE

INIZIO: differente concentrazione di soluti

tempo

FINE: Uguale concentrazione dei soluti su entrambi i lati della membrana

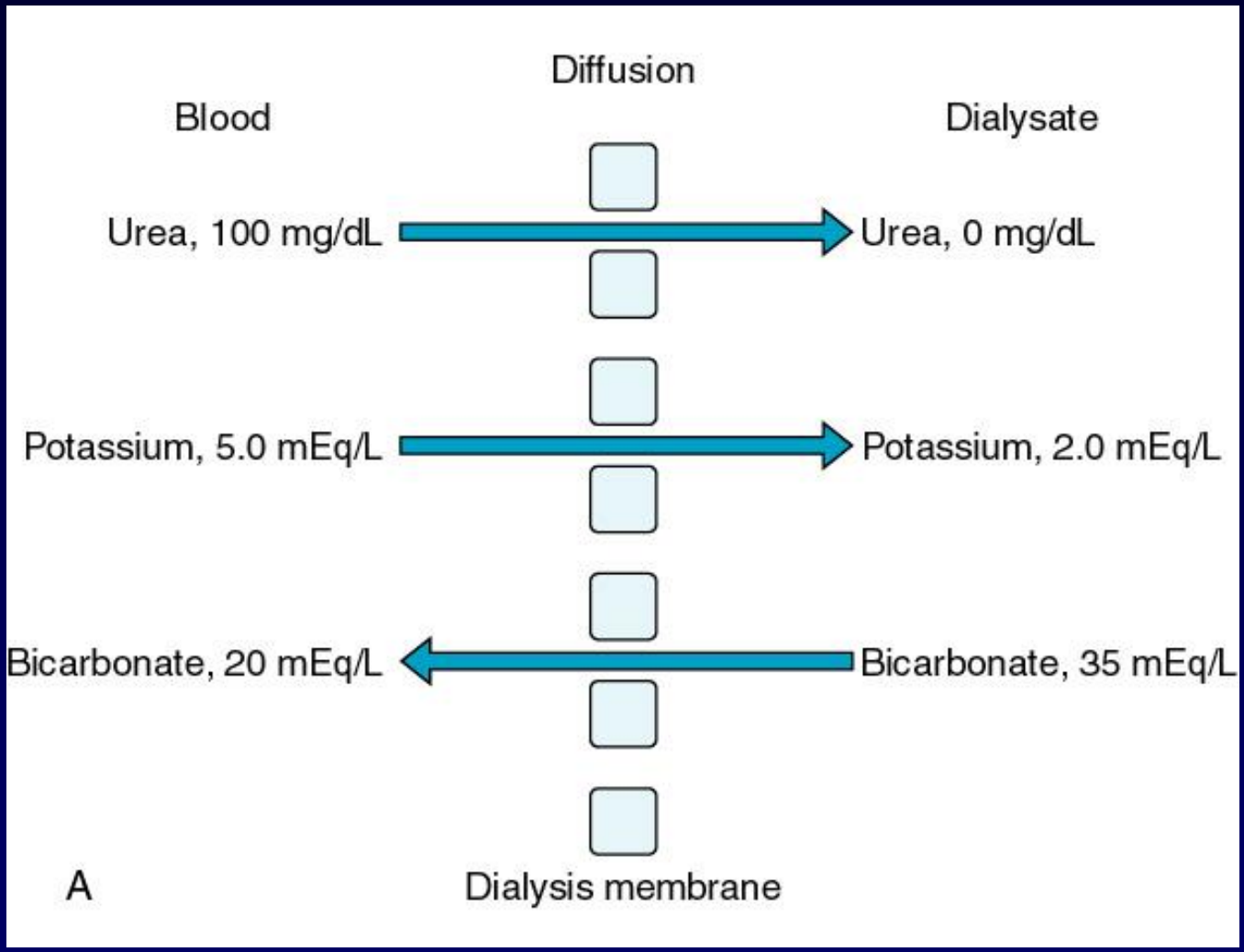


Sangue

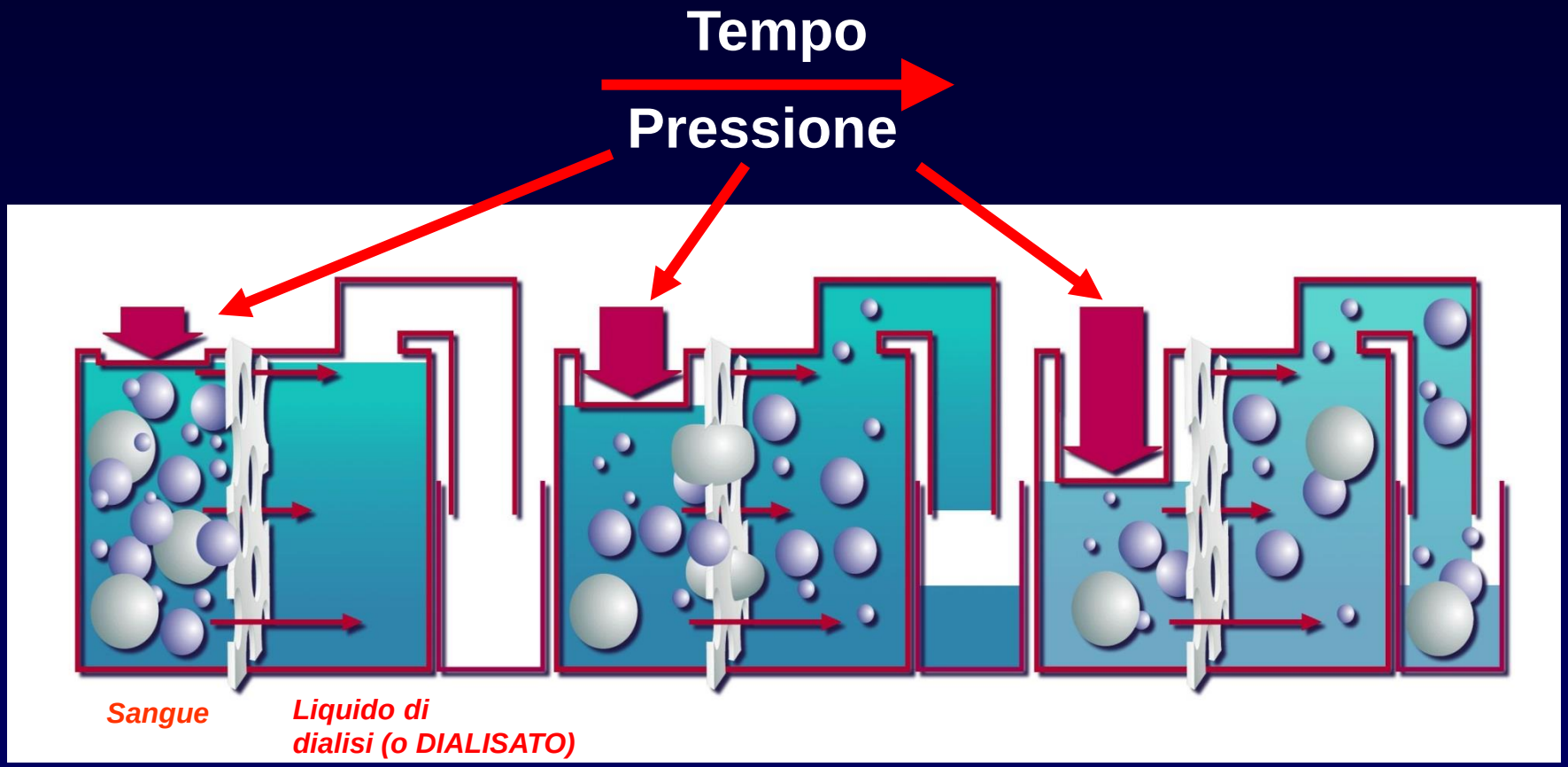
Liquido di dialisi (o DIALISATO)

Nota: La Diffusione è più veloce per le piccole molecole!

Avviene solo in presenza di liquido di dialisi

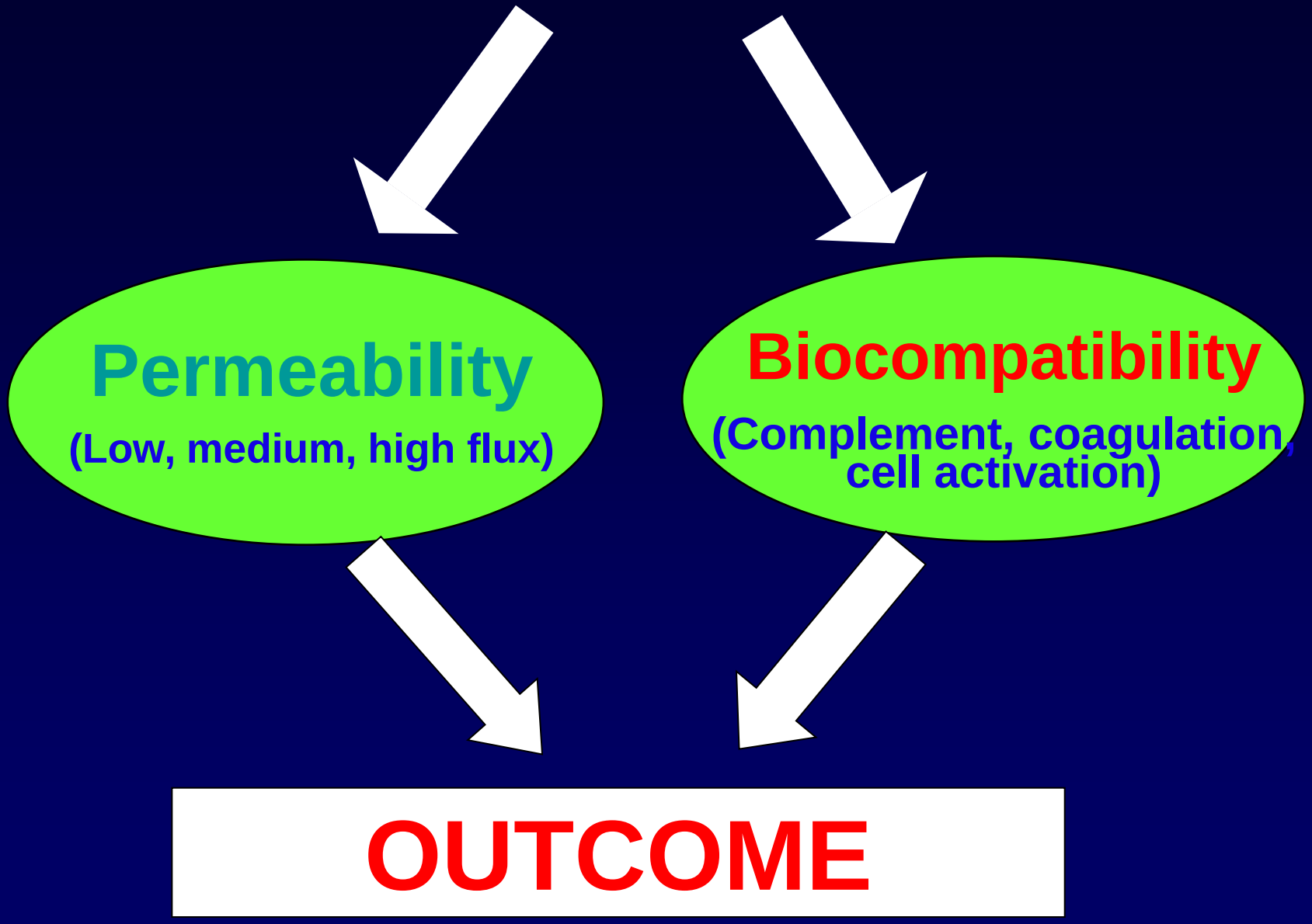

Diffusion
Blood
Dialysate
Urea, 100 mg/dL
Urea, 0 mg/dL
Potassium, 5.0 mEq/L
Potassium, 2.0 mEq/L
Bicarbonate, 20 mEq/L
Bicarbonate, 35 mEq/L
A
Dialysis membrane

CONVEZIONE



- La differente Pressione induce il movimento dell‘acqua.
- Le sostanze disciolte (in particolare, **medie e grandi molecole**) sono trasportate con l‘acqua.
- Limite: le sostanze devono poter passare attraverso la membrana.

HEMODIALYSIS MEMBRANES



HEMODIALYSIS MEMBRANES

UNMODIFIED CELLULOSE

Cuprophane (Low-flux)

Cuprammonium rayon (Low-flux)

MODIFIED/REGENERATED CELLULOSE

Hemophane (Low-flux)

Cellulose acetate (Low-flux)

Cellulose triacetate (High-flux)

SYNTHETIC

Polycarbonate (Low/high-flux)

Polysulfone (Low/high-flux)

Ethylen-vinil-alcool (EVAL) (Low/high-flux)

Helixone (High-flux)

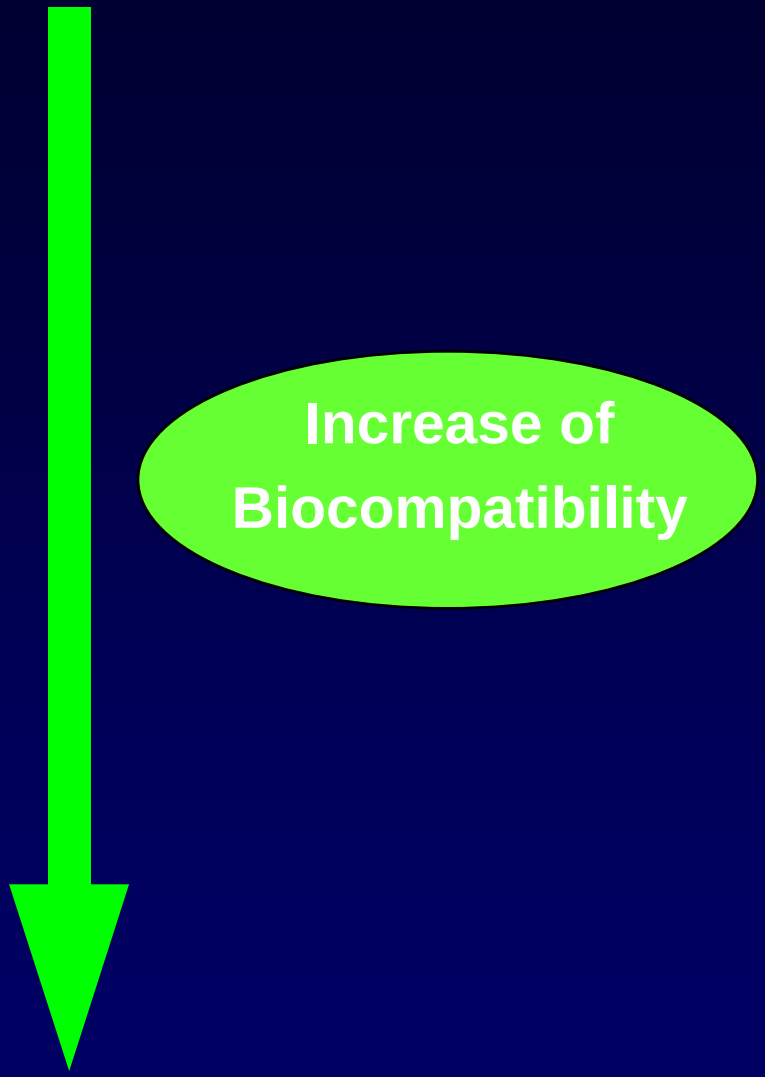
Polymethylmethacrylate (High-flux)

Polyamide (High-flux)

Polyacrylonitrile (High-flux)

Polyarileterosulfone (High-flux)

Polyester Polymer Alloy (PEPA) (High-flux)



Unmodified cellulosic membranes are bioincompatible; all other membranes are relatively biocompatible.

T Bouré and R Vanholder *NDT* 2004

Prof. Carlo Manno
U.O.C. Nefrologia, Dialisi e Trapianti
Dipartimento Emergenza e Trapianti d'Organo
Padiglione Morgagni – Policlinico
Università di Bari
Tel: 080-5478878
Email: carlo.manno@uniba.it