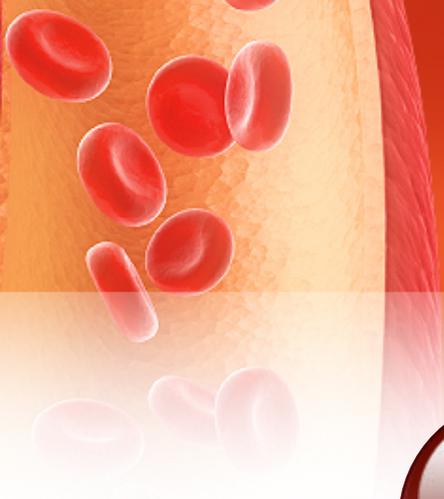


A 3D medical illustration of a blood vessel. The vessel is shown in a cross-section, revealing its internal lumen. The vessel wall is a textured, reddish-pink color. Inside the lumen, numerous red blood cells are depicted as bright red, biconcave discs. The background is a dark, gradient red, suggesting a network of blood vessels.

ACS and MI Management

Presented By: Ronel Sizer



Hx & PE

**Correct
Life
threats**

**Utilize
therapies to
buy time.**

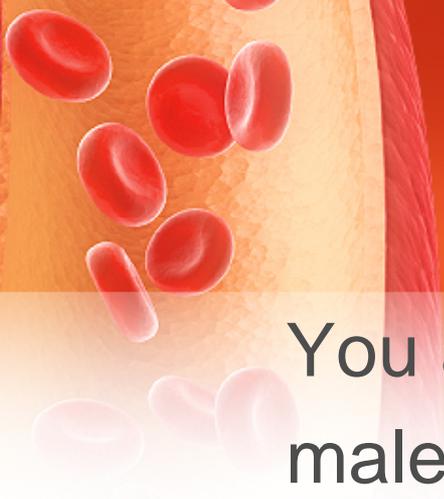
**Transport
to
definitive
care**

A systematic goal-oriented approach is crucial for effective patient management!

An illustration on the left side of the slide shows several red blood cells (erythrocytes) in a cross-section of a blood vessel. The vessel wall is shown in a light orange color, and the red blood cells are depicted as biconcave discs in various shades of red and pink. The background of the slide is a gradient from dark red at the top to white at the bottom.

Six Goals of ACS and MI Management

- Relieve distress
- Reverse ischemia
- Reduced cardiac workload
- Interrupt thrombosis
- Limit infarct size
- Limit complications

A microscopic view of several red blood cells, which are biconcave discs, floating in a fluid medium. The cells are shown in various orientations and positions, with some appearing more prominent than others. The background is a soft, out-of-focus light color.

You arrive at the bedside of a 57-year-old male C/O sub-sternal 8/10 chest pain with S.O.B.. He also appears pale & diaphoretic. No interventions have been performed.

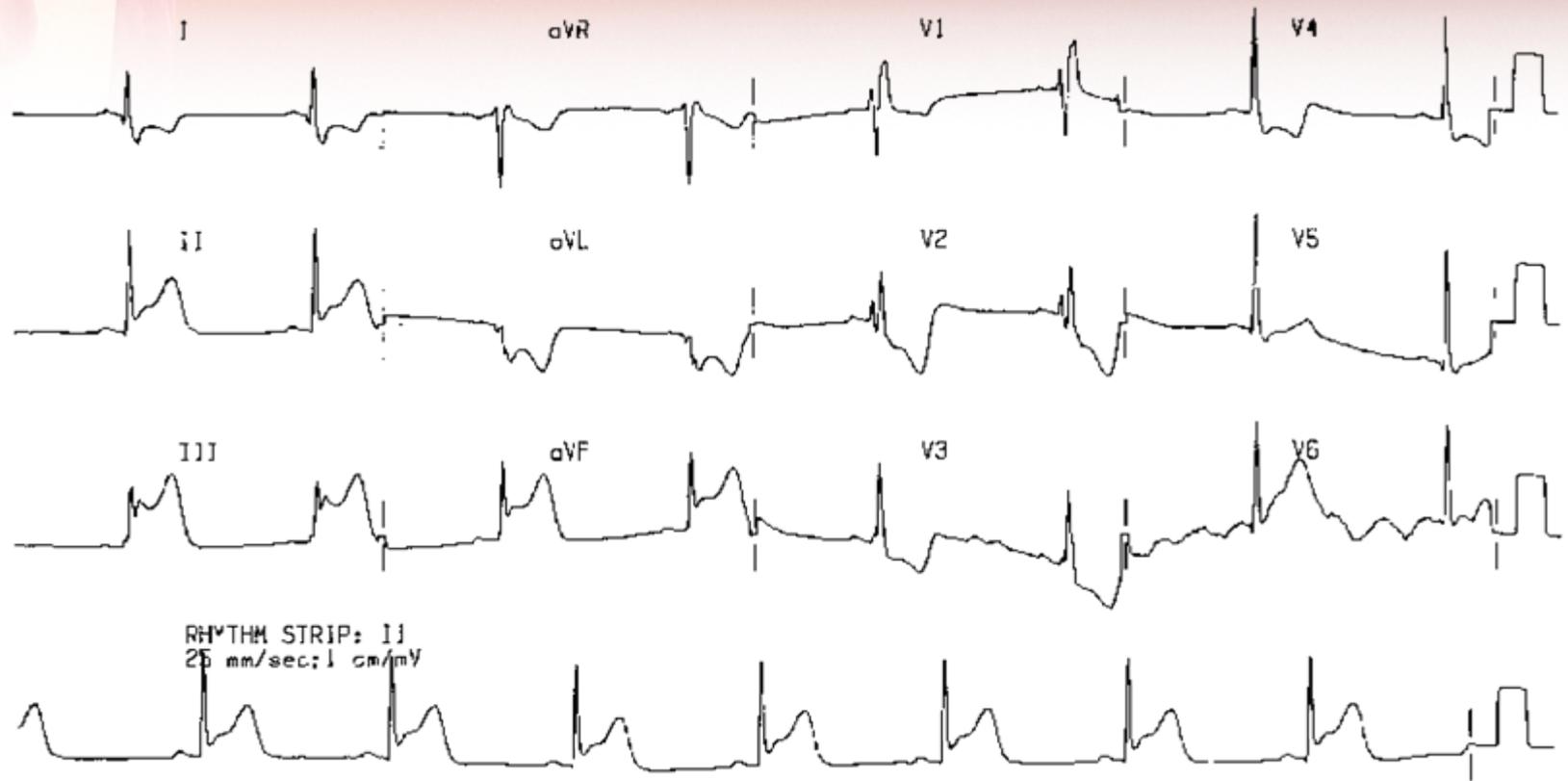
BP: 132/68

Pulse: 88

Resp: 16

SPO2: 97%

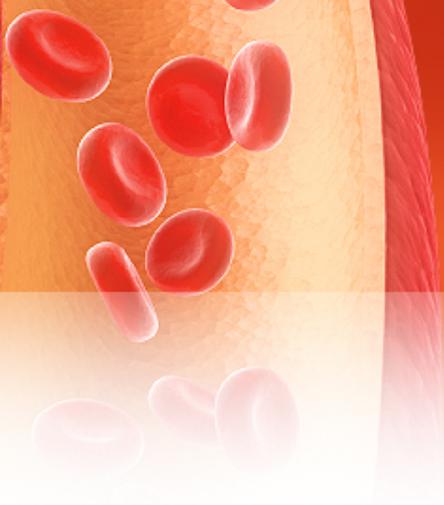
His 12 lead shows...



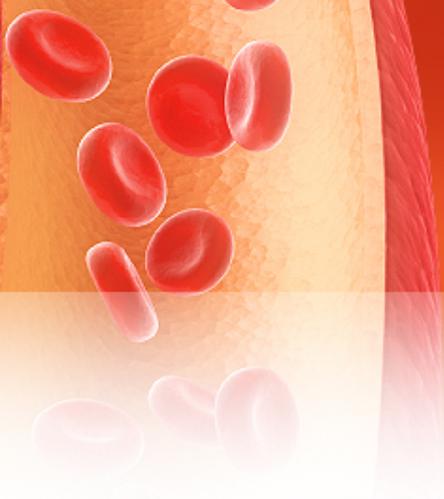
RHYTHM STRIP: II
25 mm/sec; 1 cm/mV

I DC. 00000-0000

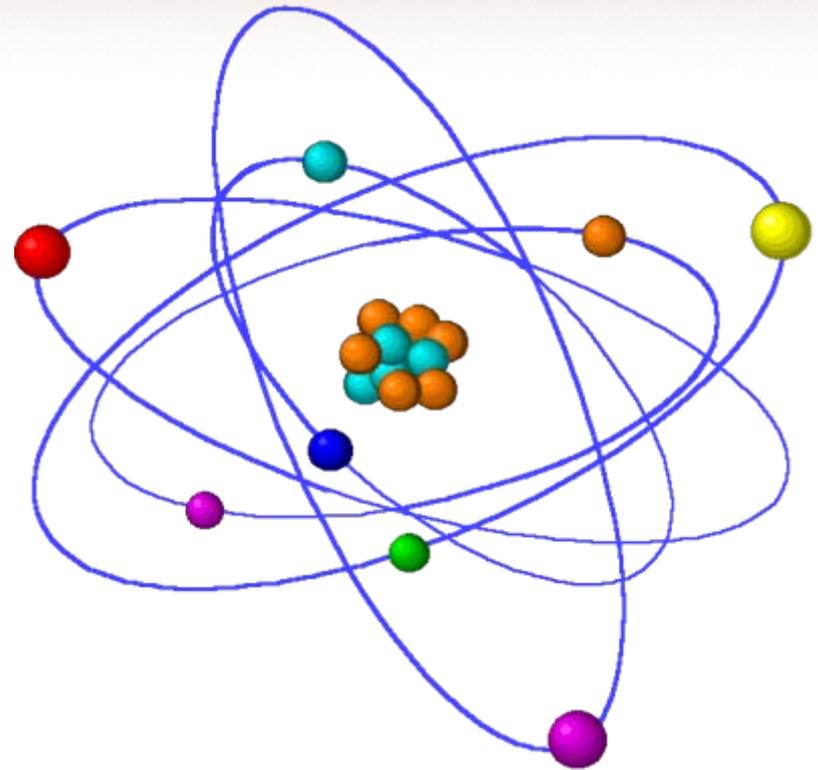
F ~ 40 01851

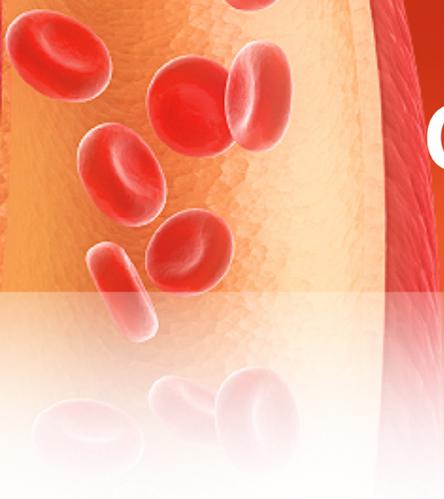


- What is your interpretation of the 12 lead?
- Where do we go from here?



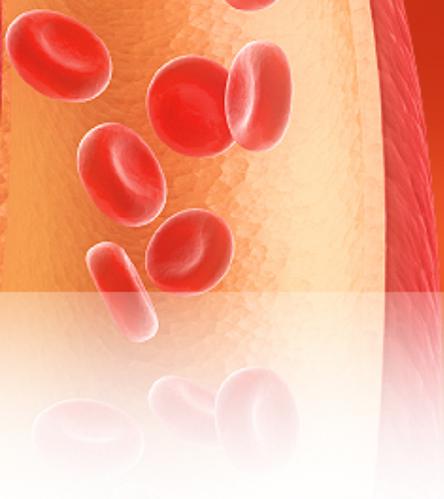
oxygen





Questions to consider...

- How much?
- How long?



oxygen

How it helps

- Increases DI_{O_2}
- limits ischemia
- May reduce infarct size

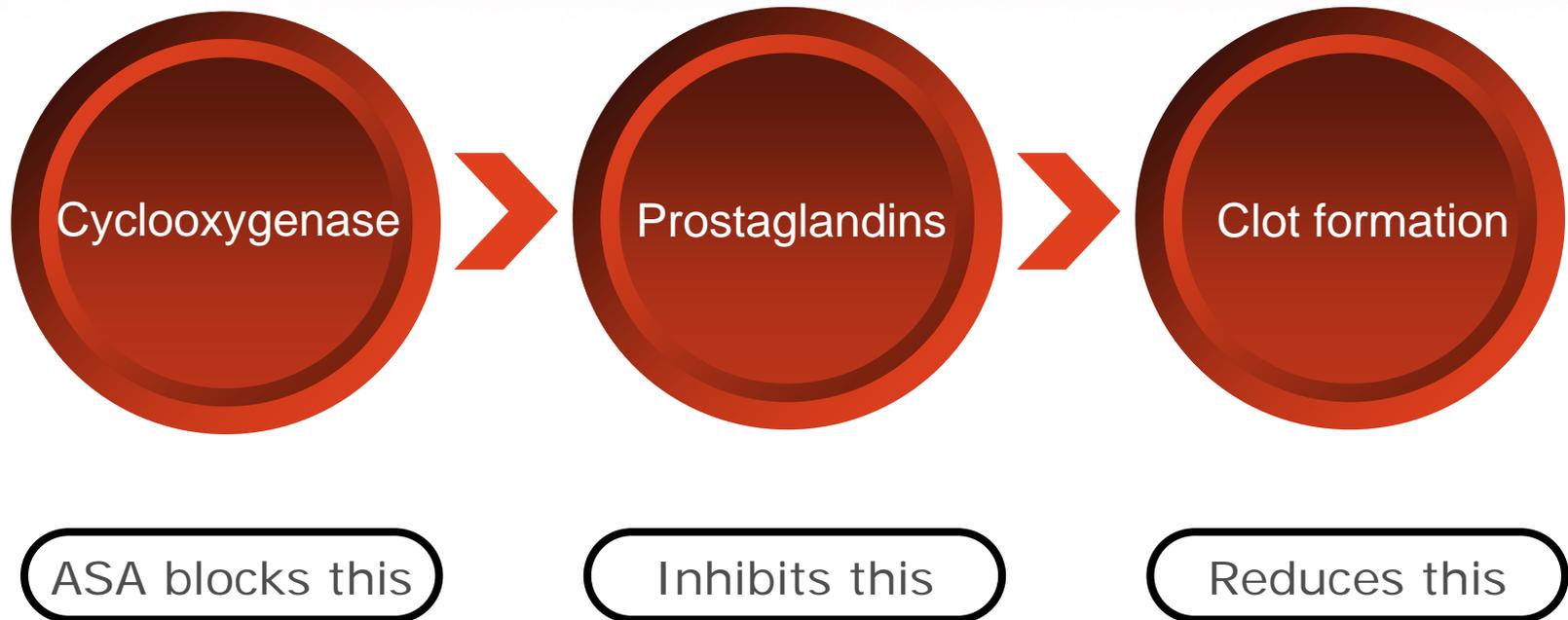
How it may hurt (high FIO_2 s)

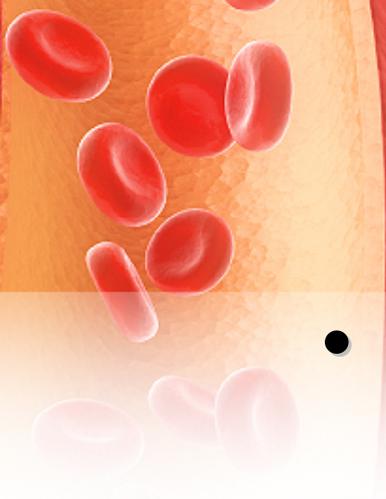
- May blunt hypoxic drive
- May cause lung damage at high pressures
- May promote ventilator dependency

Aspirin



How aspirin works...





Just the facts...

- Aspirin alone reduces mortality by as much as 20 %.
- Class: anti-platelet agent
- Chewed aspirin versus aspirin swallowed intact increases absorption rates by more than half. (5 mins vs. 12mins)
- Dosage 180-324mgs (may be given via suppository)



Aspirin Contraindications

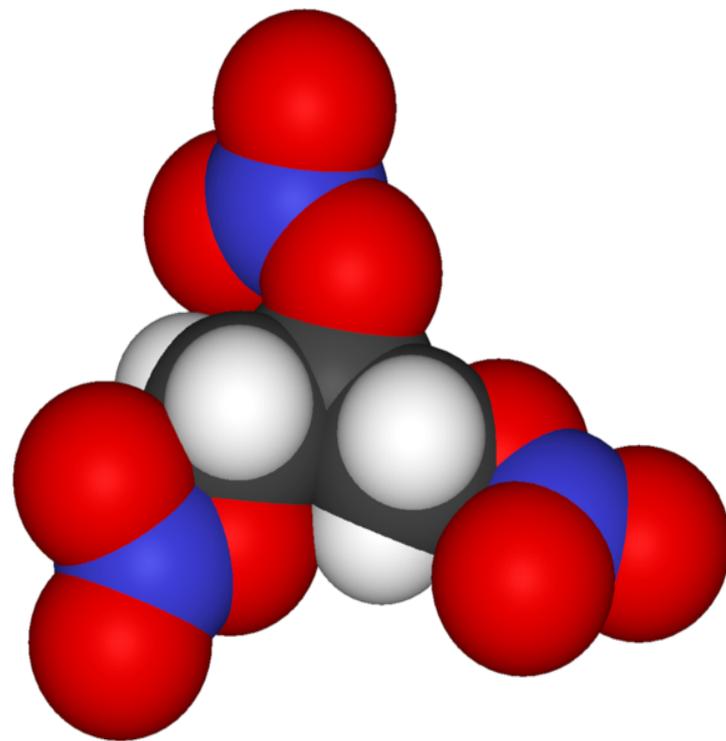
- Sensitivity

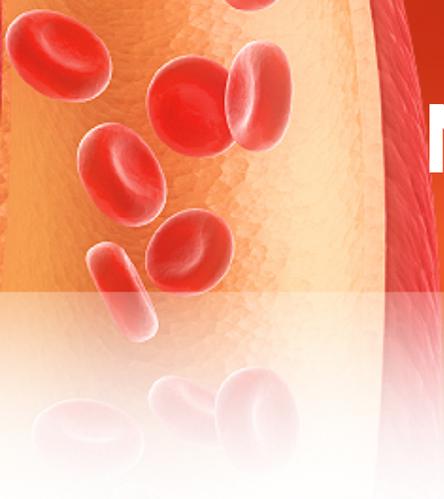
PO contraindications

- Recent GI bleed
- Active Peptic Ulcer disease
- Known other upper GI disease

*Aspirin may be given via suppository in these cases.

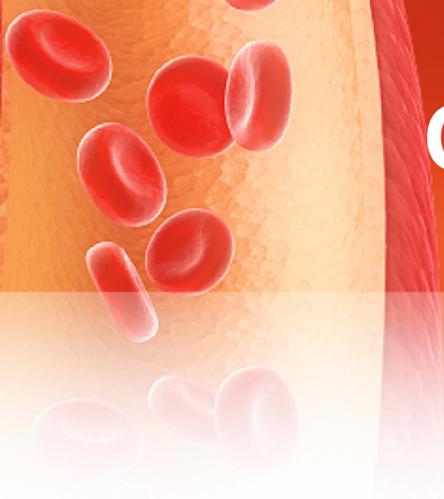
Nitrates





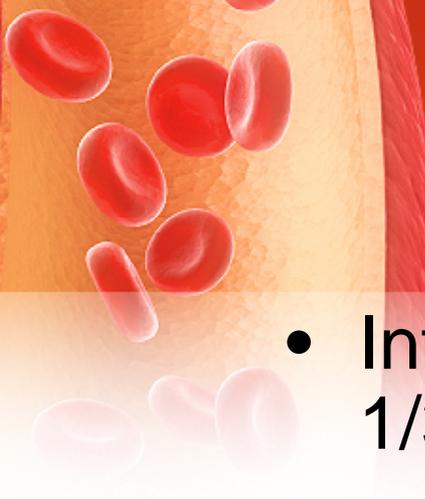
Nitroglycerin

- Works by dilating vessels (which ones is dose dependant)
- 3 commonly used preparations
Sublingual
Transdermal
Intravenous



Question???

Is there a maximum dose for
nitroglycerin???



NTG and MI with RVI

- Inferior MI's with RVI occur in approximately 1/3-1/2 of inferior wall MIs.
- Remember, preload is key to achieving adequate perfusion.

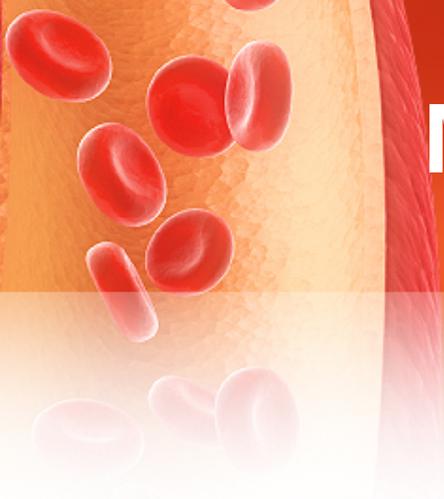
No preload= No BP

- Also remember that RVI is not an absolute contra-indication to NTG. (fluids, fluids and more fluids!)

Analgesics

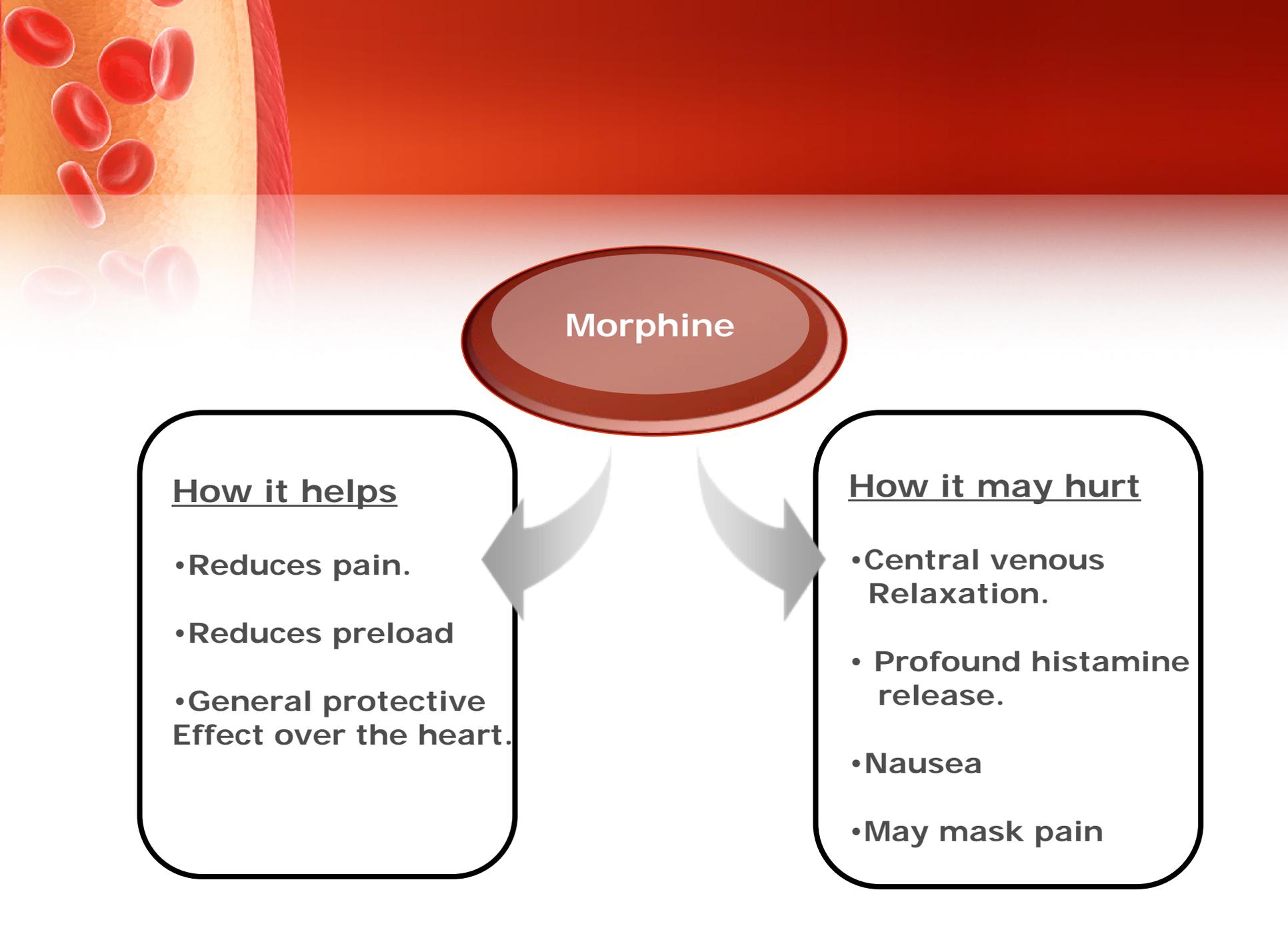


“Don’t worry this won’t hurt a bit!”

An illustration of a blood vessel with red blood cells flowing through it, positioned in the top-left corner of the slide. The vessel is shown in cross-section, with a yellowish-orange interior and a reddish exterior. Several red blood cells, depicted as biconcave discs, are scattered within the vessel.

Morphine

“Currently” the analgesic of choice in the treatment of ACS.



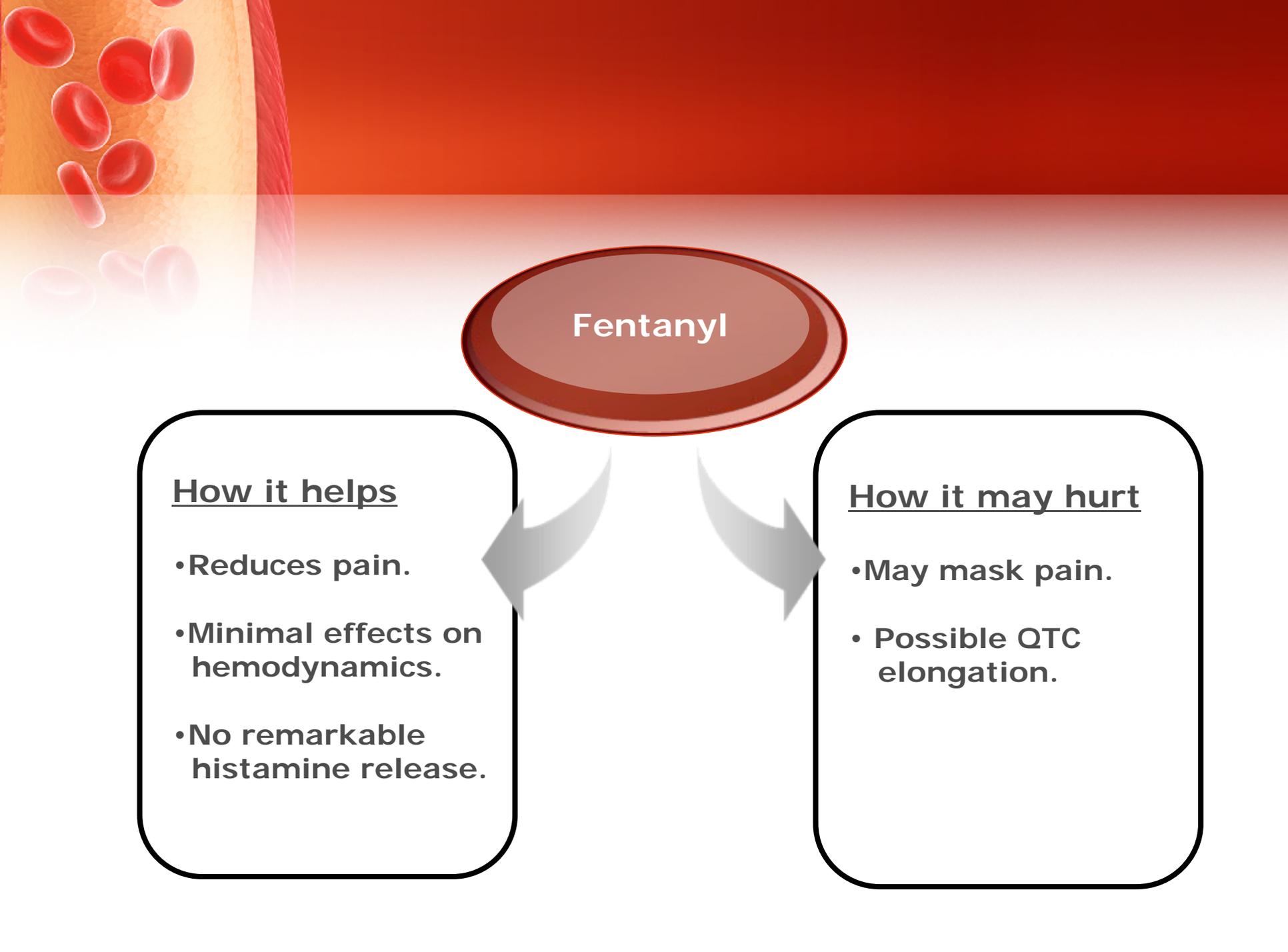
Morphine

How it helps

- Reduces pain.
- Reduces preload
- General protective Effect over the heart.

How it may hurt

- Central venous Relaxation.
- Profound histamine release.
- Nausea
- May mask pain



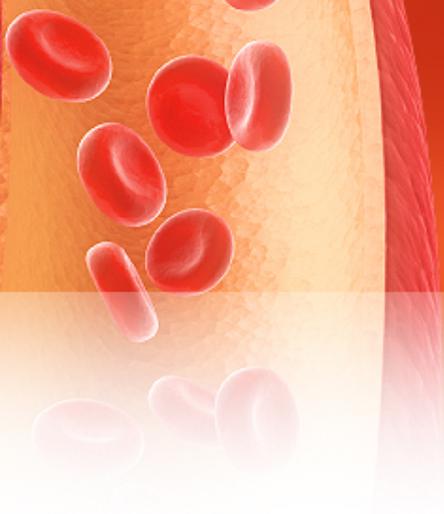
Fentanyl

How it helps

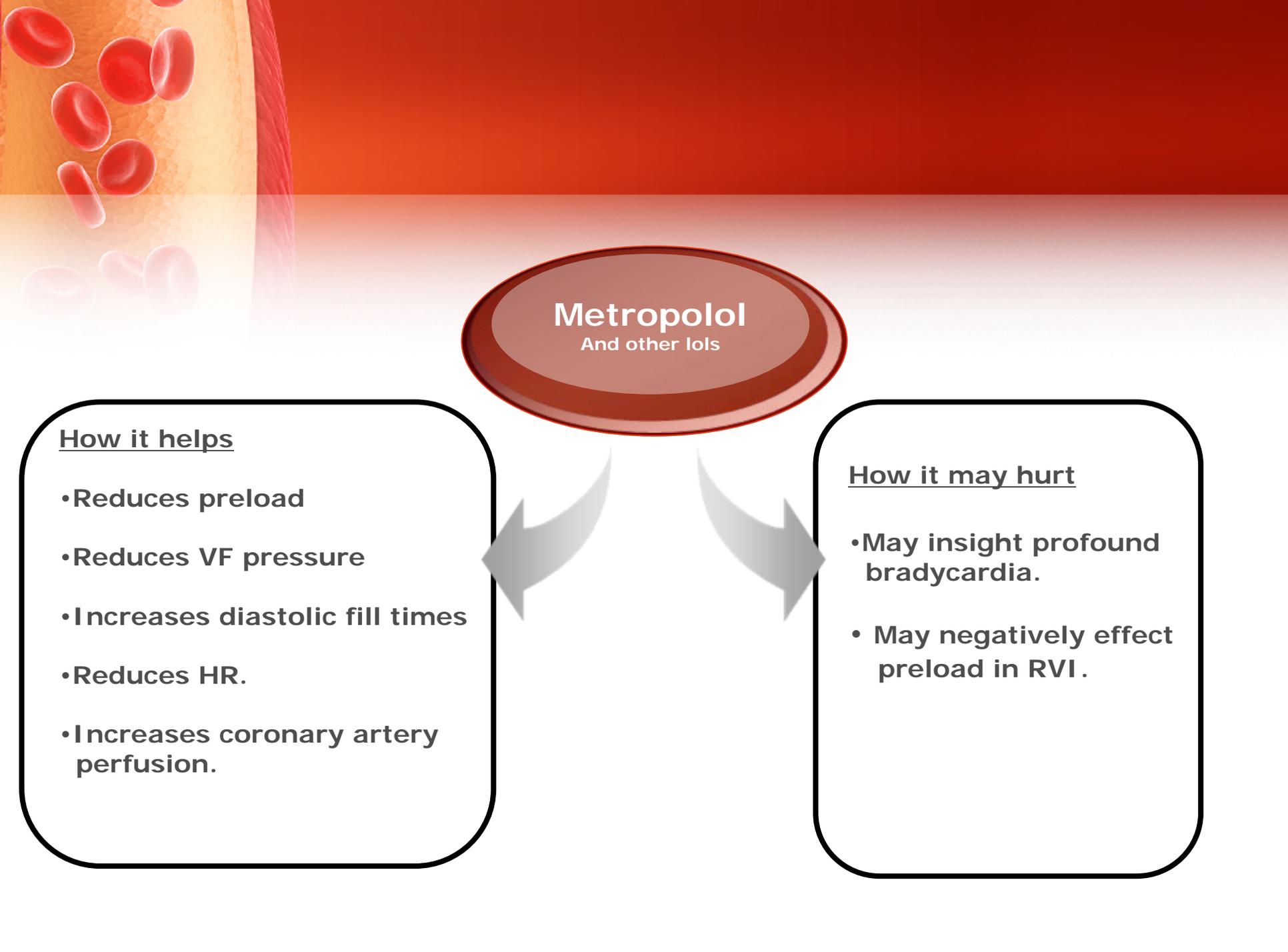
- Reduces pain.
- Minimal effects on hemodynamics.
- No remarkable histamine release.

How it may hurt

- May mask pain.
- Possible QTC elongation.



Beta Blockers



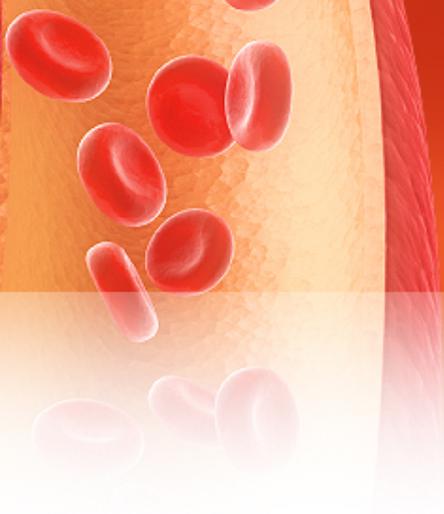
Metoprolol And other Iols

How it helps

- Reduces preload
- Reduces VF pressure
- Increases diastolic fill times
- Reduces HR.
- Increases coronary artery perfusion.

How it may hurt

- May insight profound bradycardia.
- May negatively effect preload in RVI.



Anticoagulants



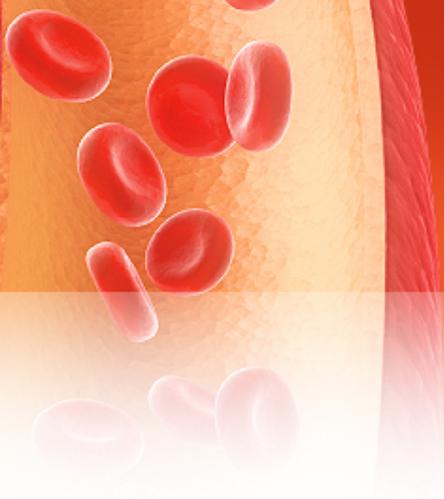
Heparin

- Heparin is a medication that is used to stop the formation of additional clotting.
- This medication is particularly useful when used in conjunction with thrombolytics or PTCA (angioplasty).



Heparin

- Administer 5000 units followed by 1000u/hr.
- Also use weight based dosing.
- Adjust to maintain PTT 1.5 to 2 X's normal.
(24-28)



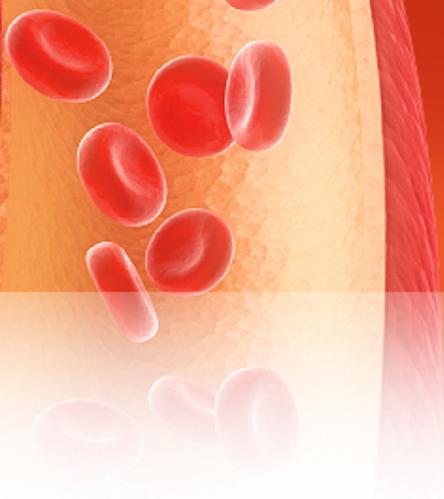
Heparin

How it helps

- Inhibits platelet aggregation.

How it may hurt

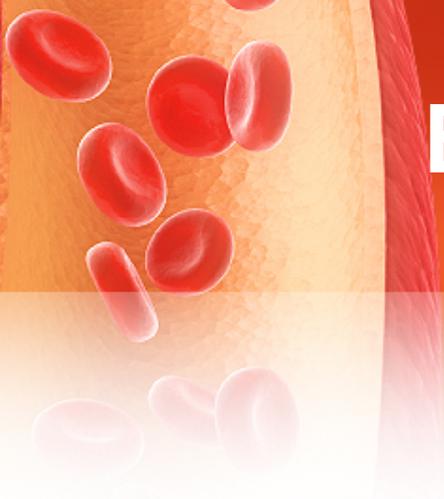
- May promote uncontrollable hemorrhage.
- May cause HIT or HAT. (48-72hrs)



LMW Heparin

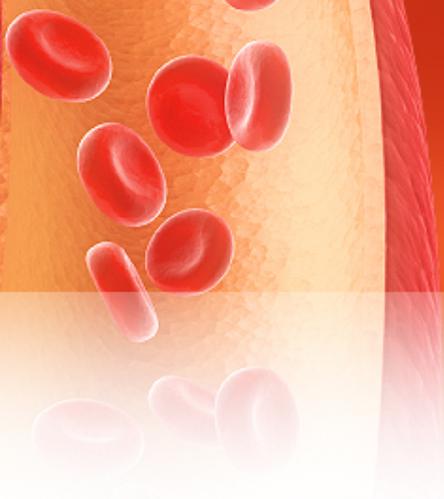


More funny pictures at www.afunworld.com



Enoxaparin (Lovenox)

- In comparison to UFH, LMW heparin is composed of short rather than long-chain Polysaccharides.



Enoxaparin

How it helps

- Prevents clot formation.
- Instantly therapeutic
- Reduced risk of thrombocytopenia

How it may hurt

- May promote uncontrolled hemorrhage.



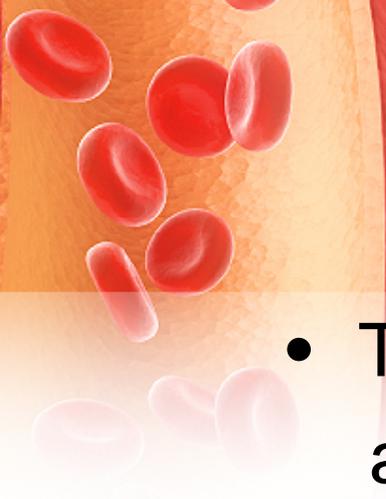
LMW Heparin (enoxaparin)

Dosage: 1mg/kg SQ

Alternative dosing: 30-40mgs IV bolus followed by 1mg/kg SQ.

A few notes:

- LMWH is preferred to UFH for patient's with unstable angina and non-STEMI MI
- UFH is still recommended for patients who undergo reperfusion therapy with fibrinolytics.
- LMWH and UFH considered are equivalent for patient's who don't undergo reperfusion therapy.



Glycoprotein IIB/IIIa Inhibitors

- They prevent the binding of fibrinogen and thus block platelet aggregation.

There are 3 approved for use in the US.

- ReoPro
- Integrillin
- Aggrastat



Abciximab (Reopro)

a.k.a Chimeric human-murine monoclonal antibody.

- It bonds with a high affinity to receptors on platelets .
- It reduces platelet aggregation by 80%

NO platelet aggregation= No clot formation.



Reopro dosing

- 0.25 mgs/kg IV bolus
- Followed by an infusion of 0.125 mcg/kg/min
- Max. dose is 10 mcg/min for 12 hours



Reopro Contraindications

Too Many TO LIST ON A USER FRIENDLY SLIDE!!

- Just remember any condition that may cause promotes hemorrhage or uncontrolled hypertension or CVA is bad!!



Eptifbatide (Integrillin) dosing

Unstable Angina: 180 mcg/kg IV bolus followed by a continuous infusion of 2mcg/kg/min until D/C or surgery.

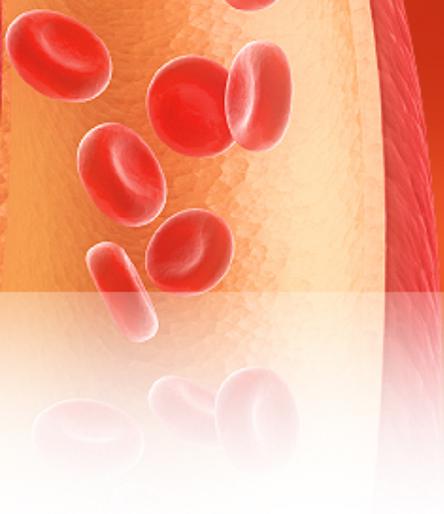
In case of pts undergoing PCI:

135mg mcg/kg IV bolus before procedure followed by 0.5 mcg/kg/min.

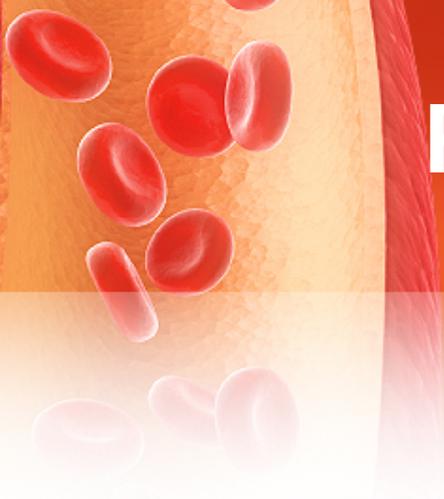


Tirofiban (Aggrastat)

- Probably the most common in this area
- Inhibits >90% of platelet aggregation.
- Dosing: 0.4 mcg/kg/min IV for 30mins; continue at 0.1 mcg/kg/min.
- Remember half dosing applied in pts with renal insufficiency.



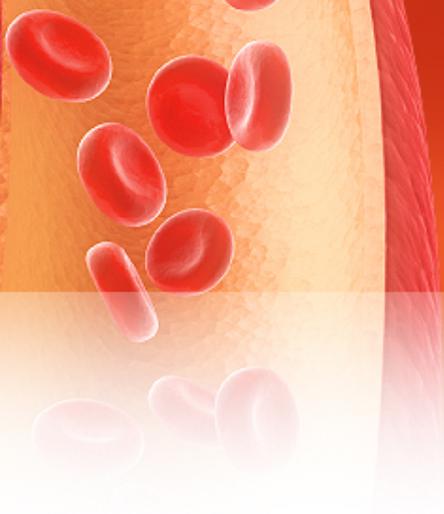
AD Receptor Antagonist



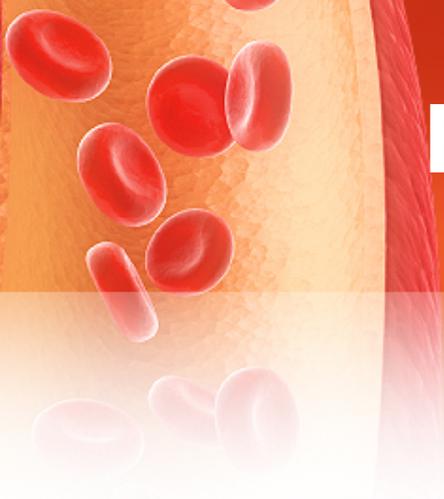
Plavix

Well tested and has an well established patient safety profile.

Dose: 300mg, followed by 75mg (PO) per day



Fibrinolytics



Fibrinolytics

- Fibrinolytics are used to dissolve the thrombus that is obstructing the coronary artery.
- There are three kinds that we will be discussing. (Activase, Retavase, TNKase)



Fibrinolytics

- When a patient is having an AMI there is a waveform of damage with 90% being done within the first six hours.
- The majority of the damage will occur within the first hour.
- This is why rapid administration of fibrinolytics are important.



Qualifications for Therapy

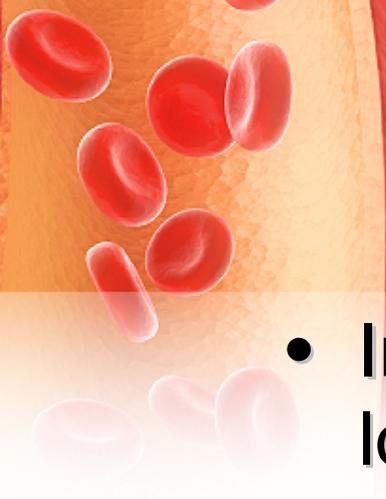
Angioplasty is not immediately available **AND**
ALL of the following conditions exists:

- Onset of chest pain = or > 30mins but < 12hrs.
- 12-lead shows ST-segment elevation of 0.1mv (1mm) in 2 or more contiguous leads or a new LBBB.



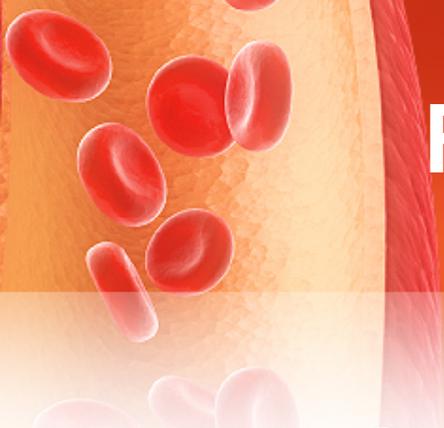
Qualifications for Therapy

- Absence of hypotension or heart failure.
- No contraindications to the agents.



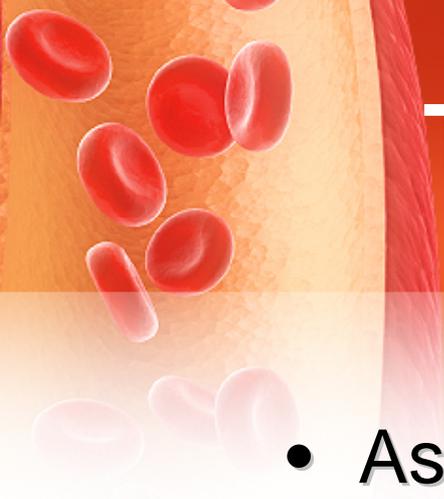
Activase (tPA)

- Indications are AMI, CVA, PE, other clots at low doses.
- MITI trial
- Complicated dosing (15mg/kg,0.75,0.5)



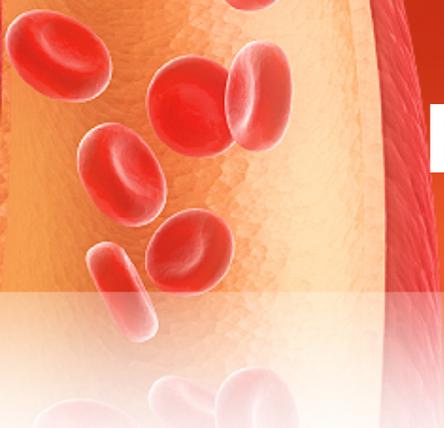
Retavase (reteplase)

- Similar effectiveness as tPA.
- Cost equivalent.
- Easily administered.
- Administer 10U over 2 min. Repeat in 30n min.



Tenecteplase (TNKase)

- As effective as tPA with extreme ease of administration.
- Administer 30 – 50 mg.
- Weight based medication.

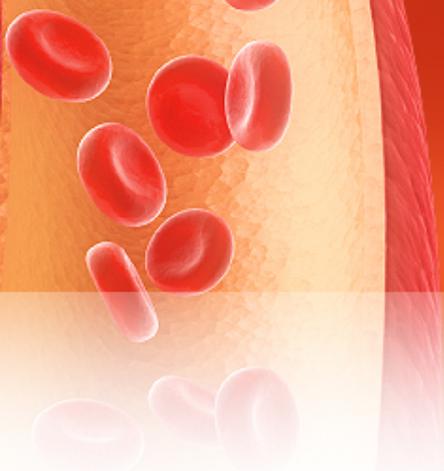


Fibrinolytic Contraindications

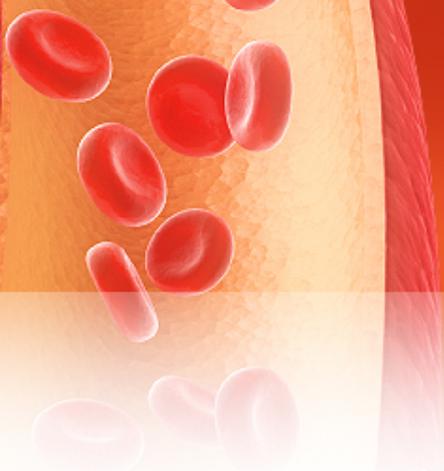
- Uncontrolled HTN ($\geq 180/100$)
- Hx. CVA or TIA
- Known bleeding disorder.
- Internal bleeding within past 4 weeks.
- Surgery or trauma in past 3 weeks.
- Terminal Illness
- Jaundice, hepatitis, or kidney failure



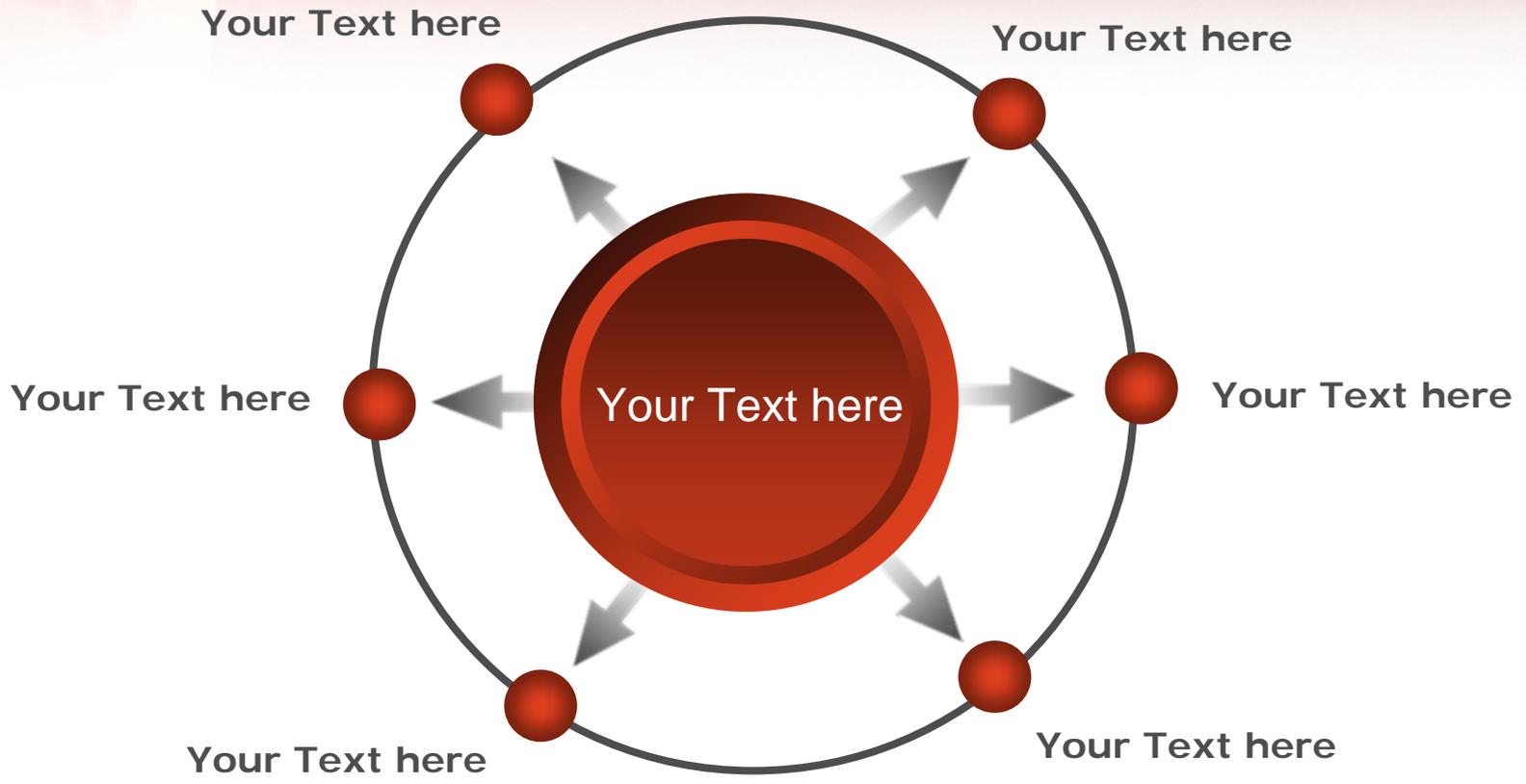
Thank You!

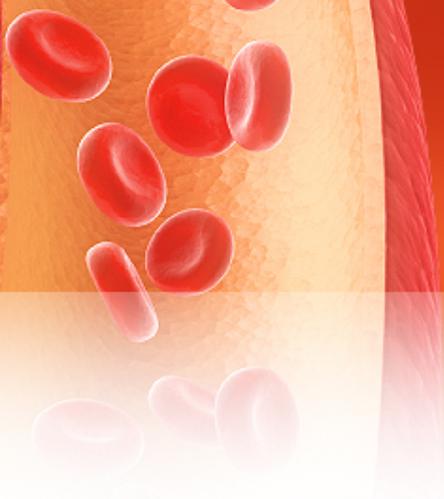


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- 1** Introduction
- 2** Strategy
- 3** Challenges Forward
- 4** History





Add Your Text here

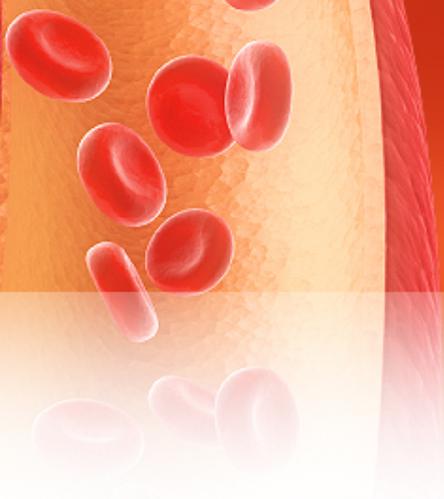


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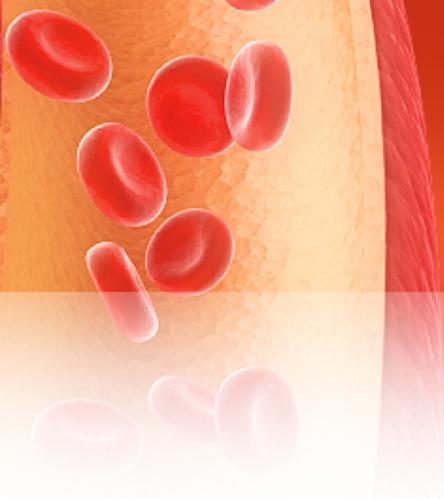


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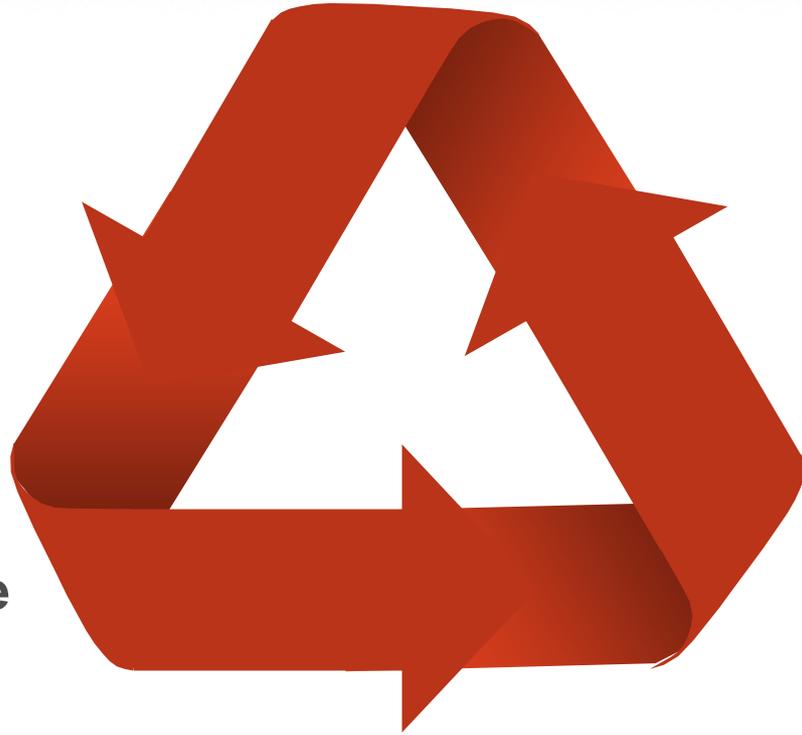


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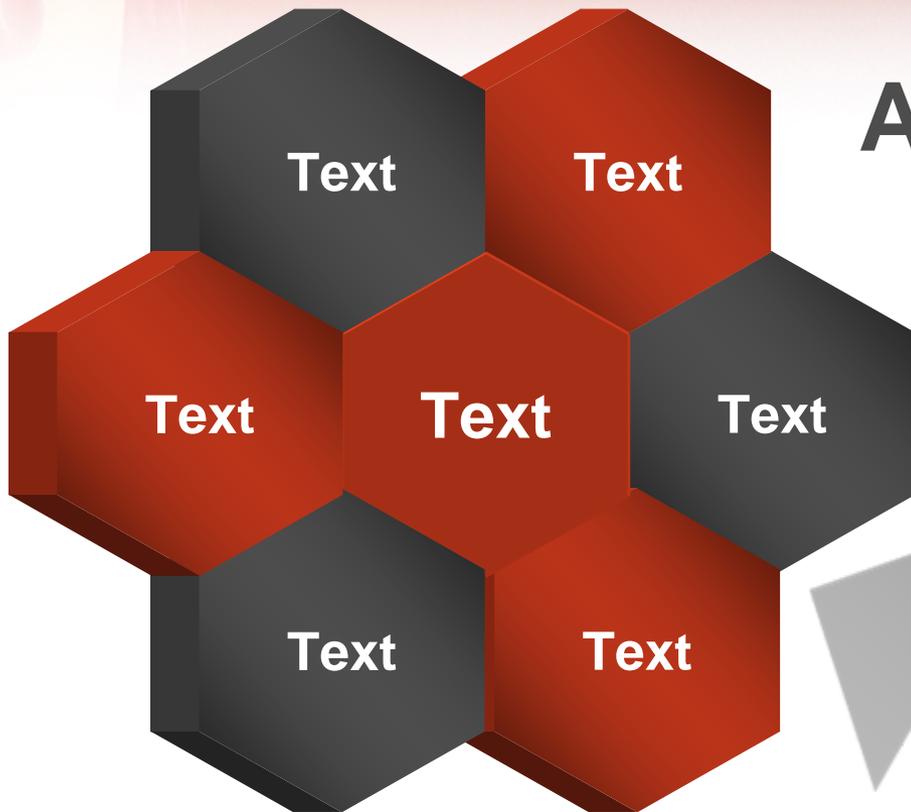
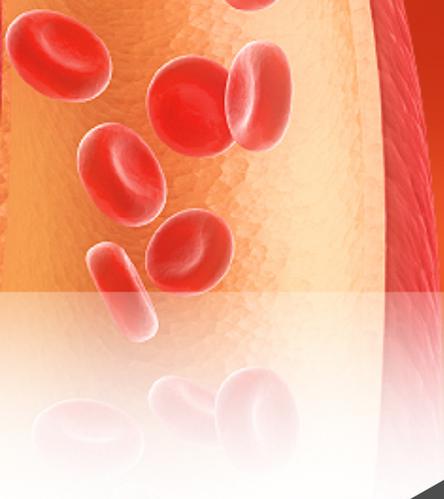


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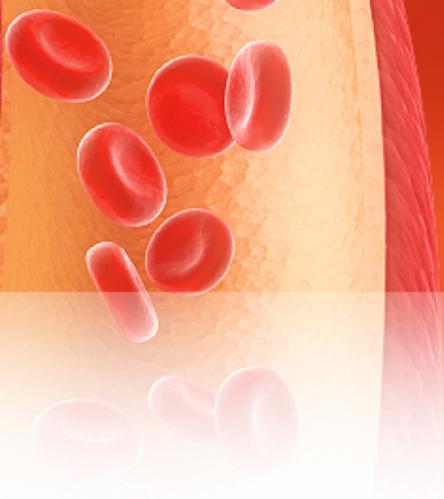
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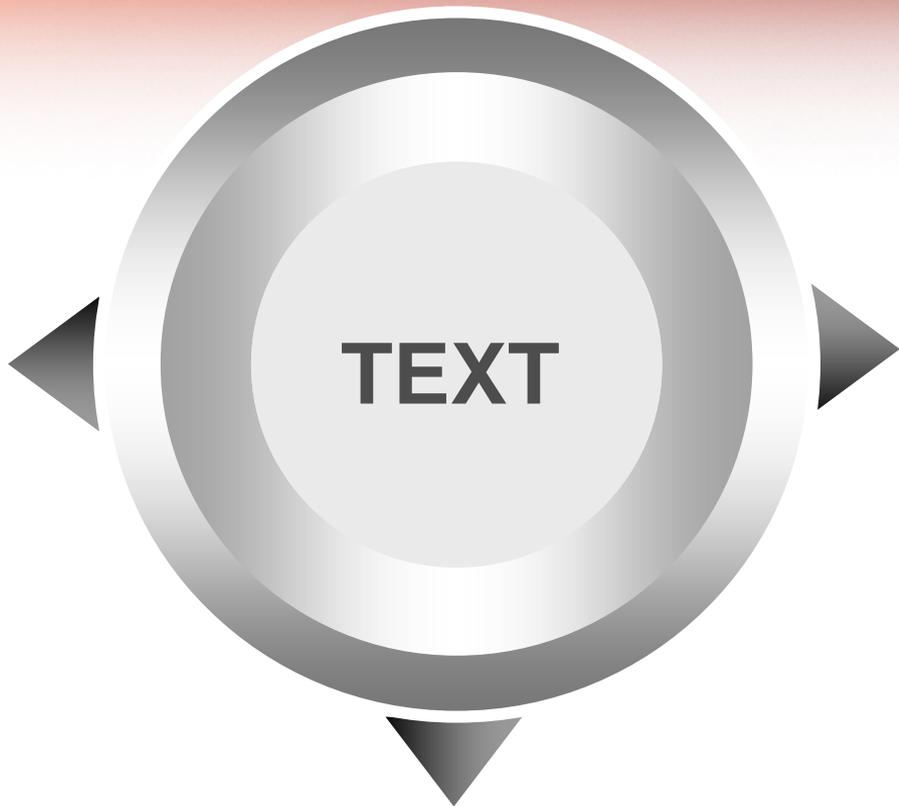




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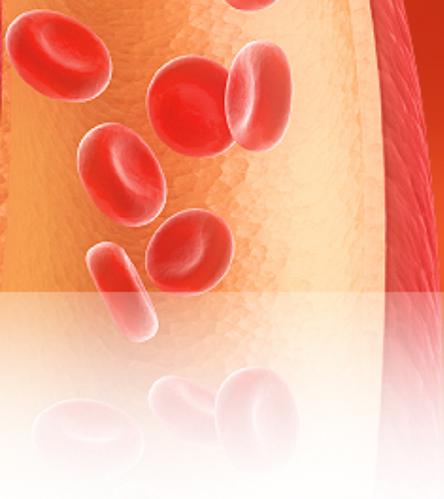


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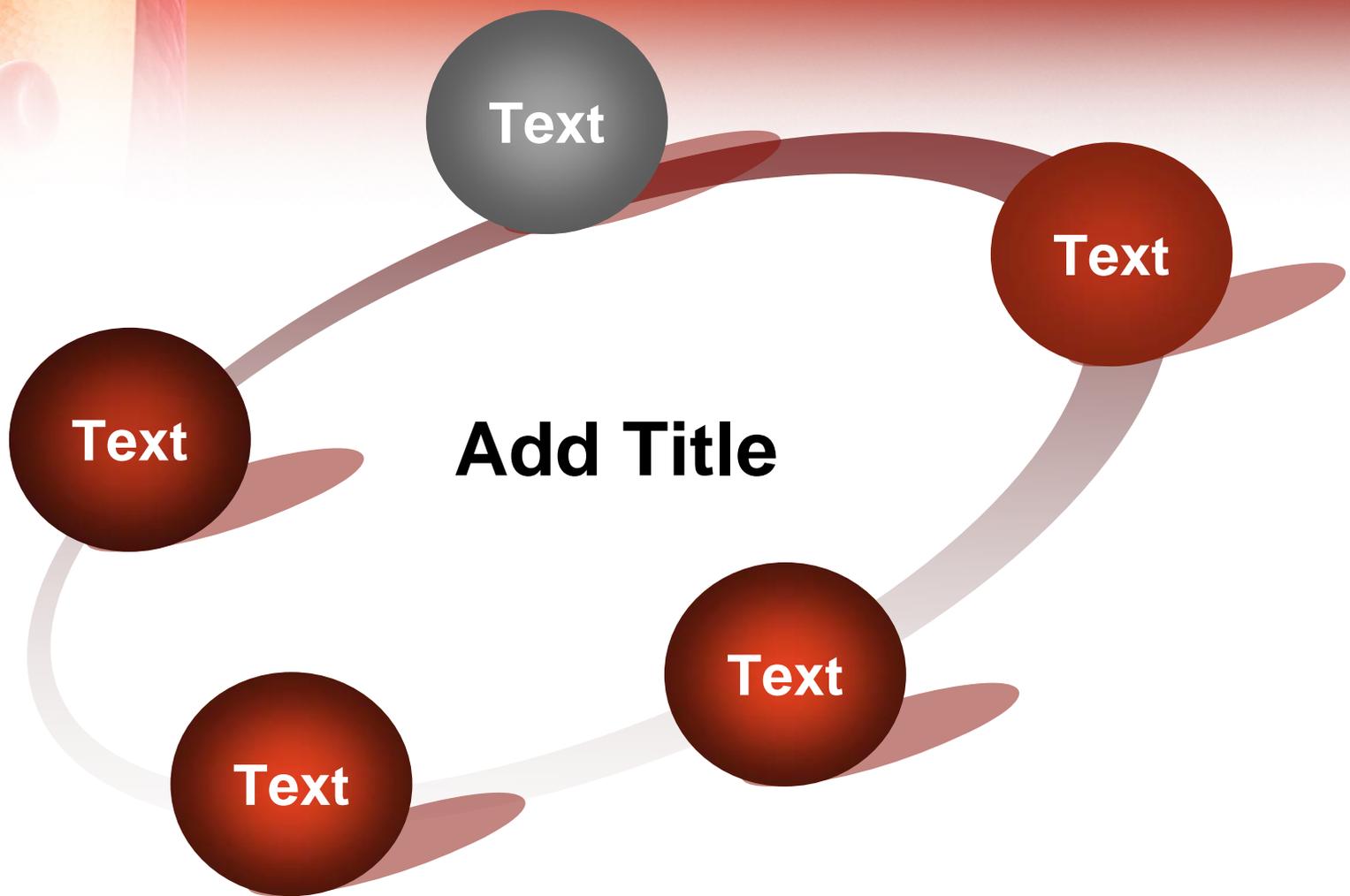
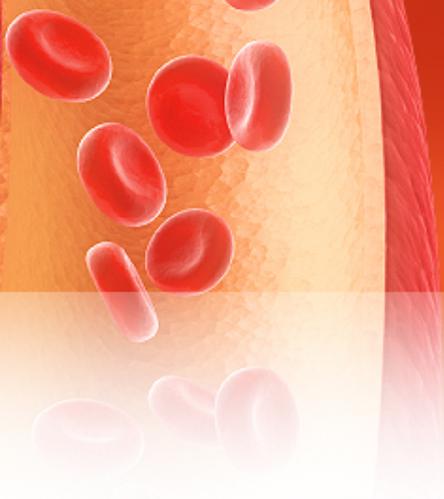
Your Text

Click to add text

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Click to add text

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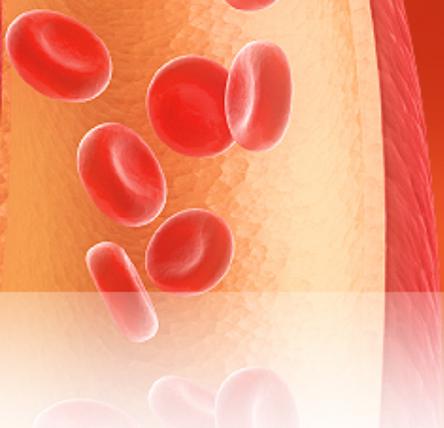
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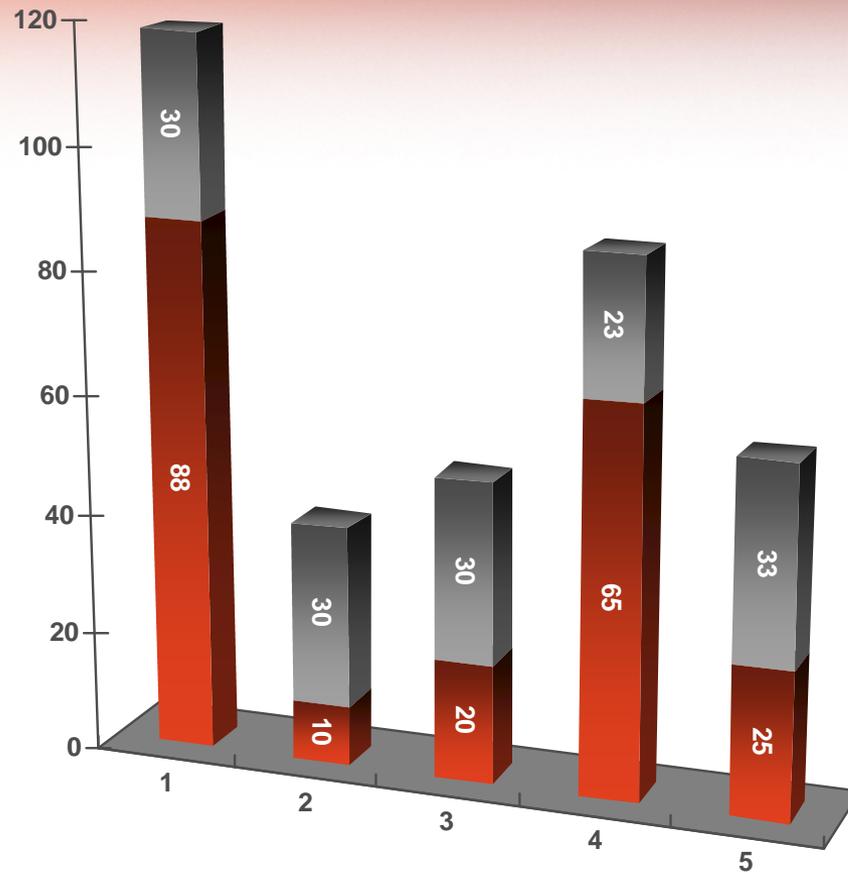
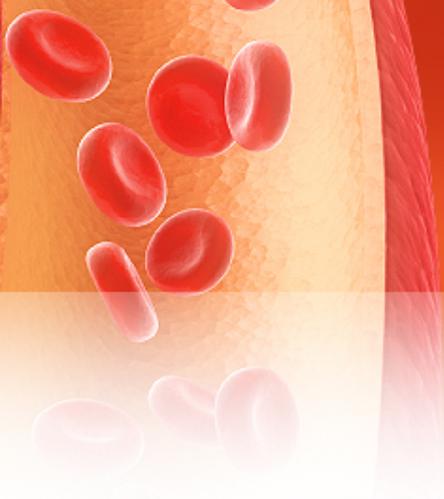


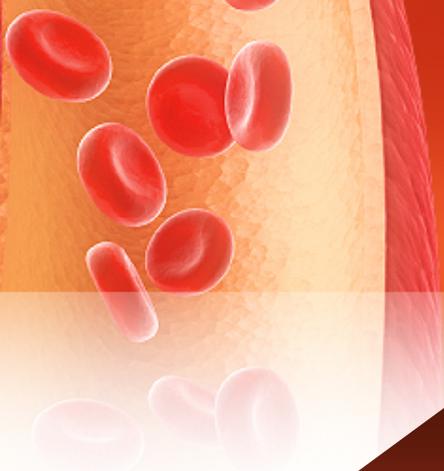
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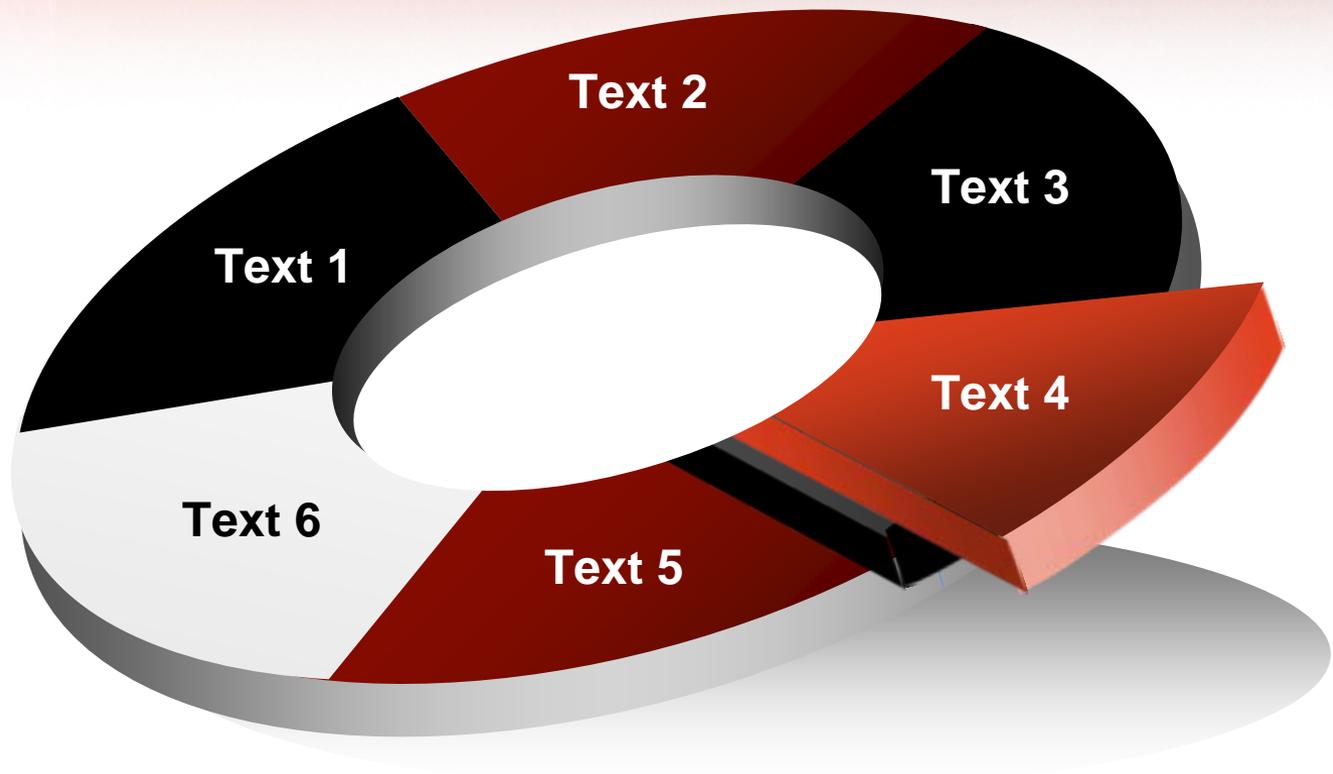
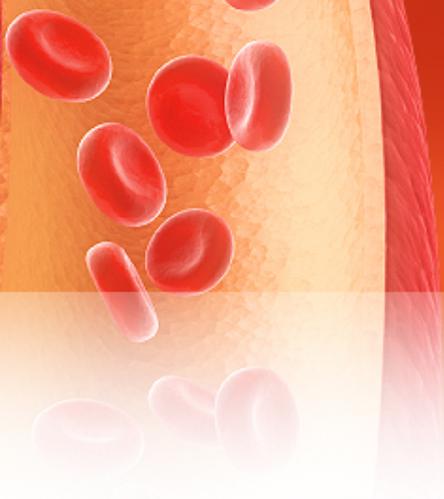
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Text 1

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