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Intra aortale ballonpomp

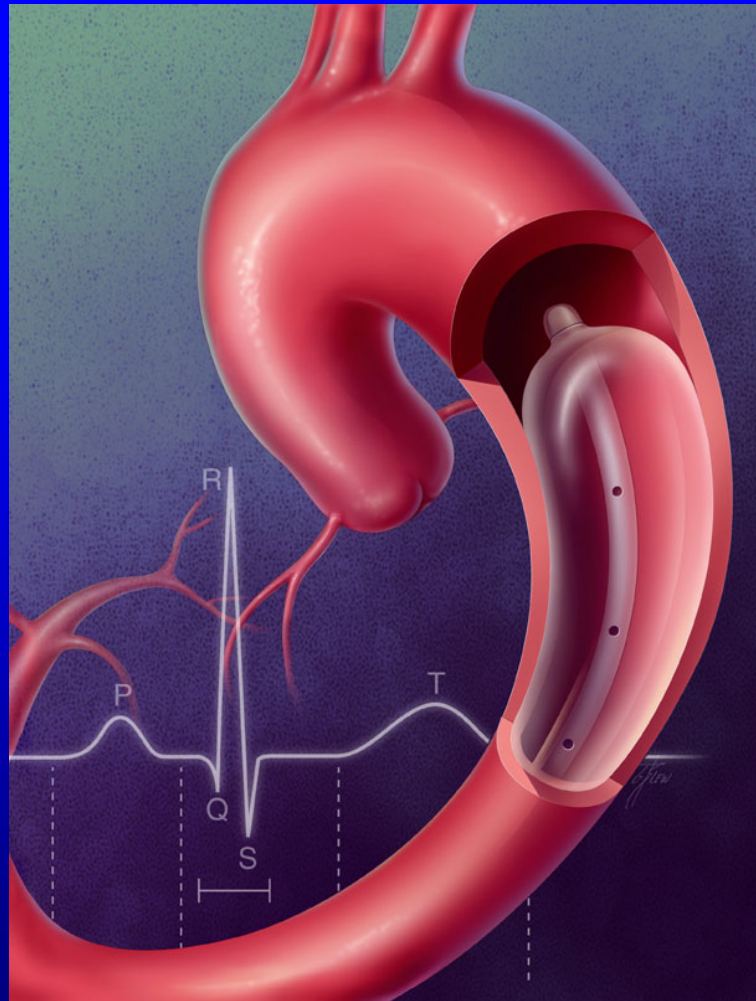
Toepassing IABP - cardiogene shock

- low output syndroom
- coronairsclerose

Gemeenschappelijke probleem verminderde
Cardiac Output of Hart Minuten Volume

IABP zorgt voor een betere doorbloeding van het myocard
gevolg verbeterde CO

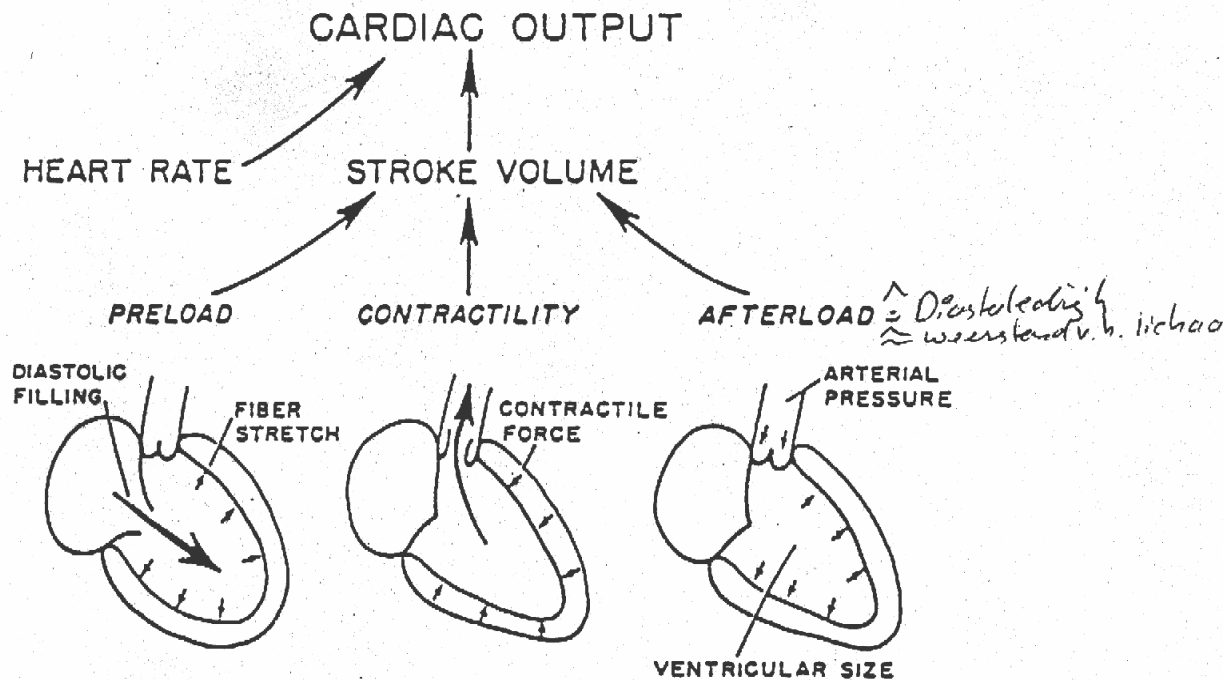
IABP



Cardiac Output

II. Measurement of Cardiac Performance

A. Cardiac Output = heart rate x stroke volume
(NL 4-6 liters/minute)



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Cardiac output

CO = Hartrate * Strokevolume

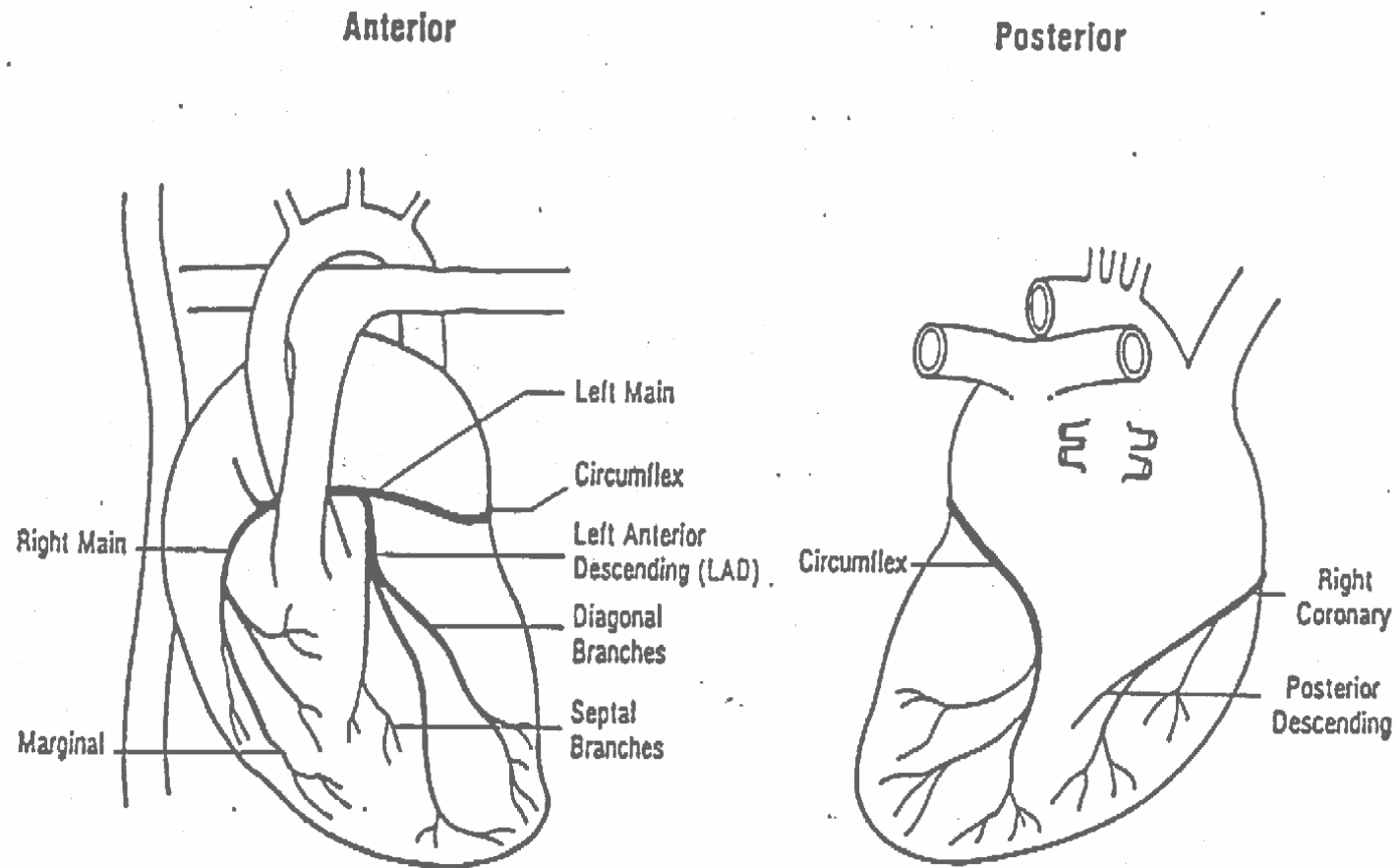
HMV = Hartfrequentie * Slagvolume (l/min)

HR aanpassing naar behoefte van het lichaam.

Slagvolume is afhankelijk van preload afterload contractility

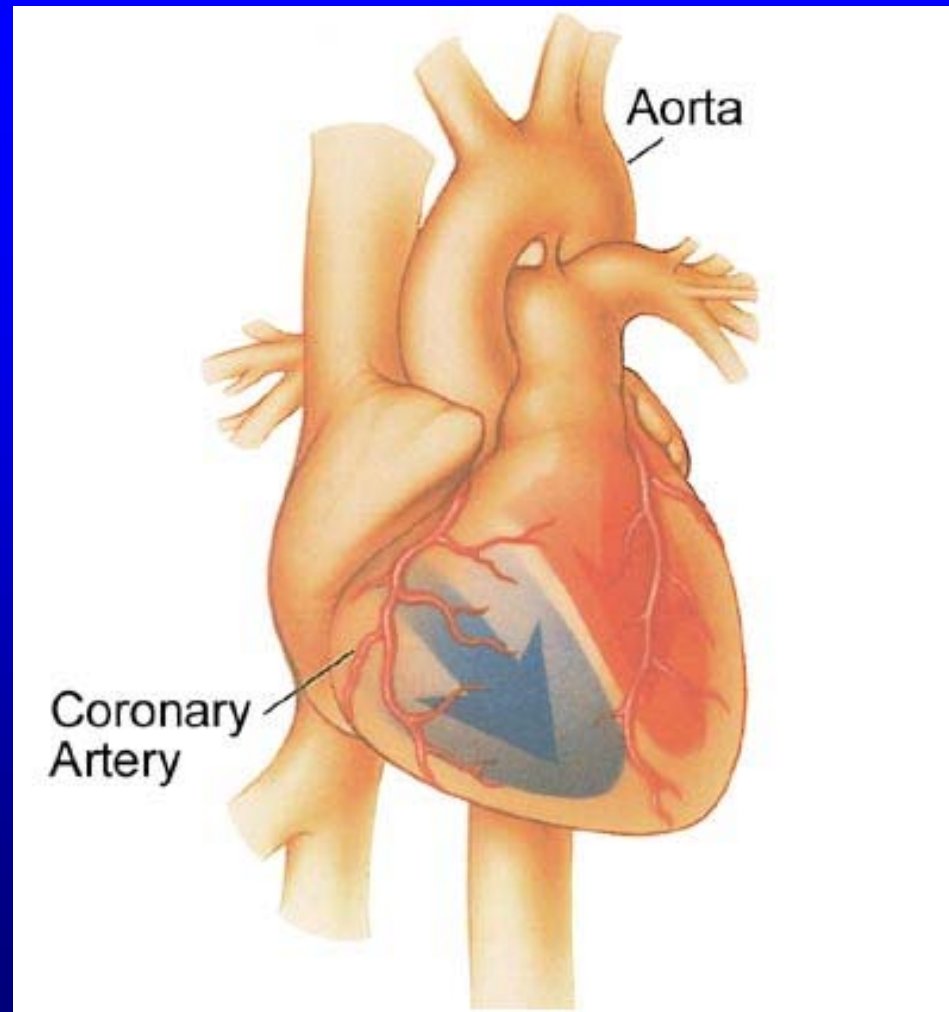
Dit is afhankelijk van de goede doorbloeding van het myocard de hartspier of anders gezegd aanbod van zuurstof naar de hartspier. Coronair perfusie

Coronaire Perfusie

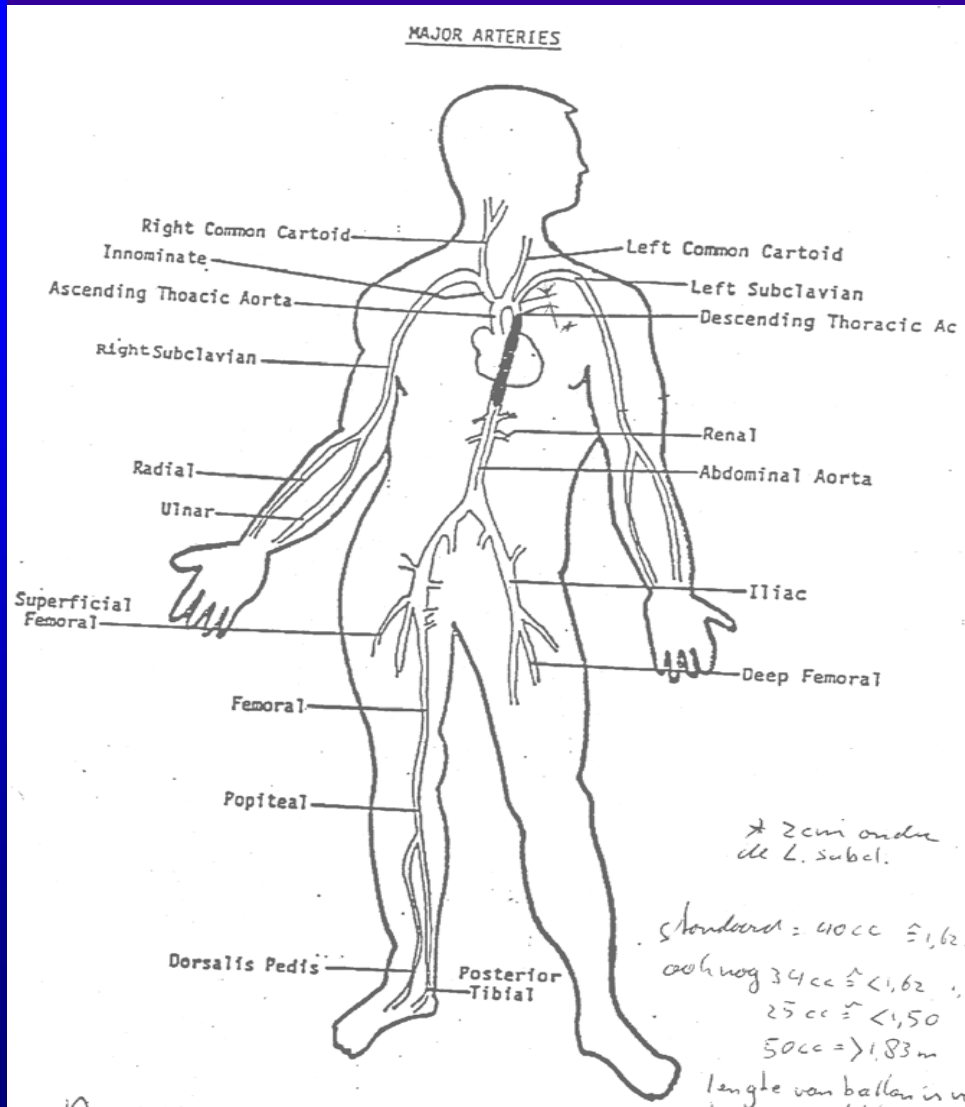


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Coronaire Perfusie

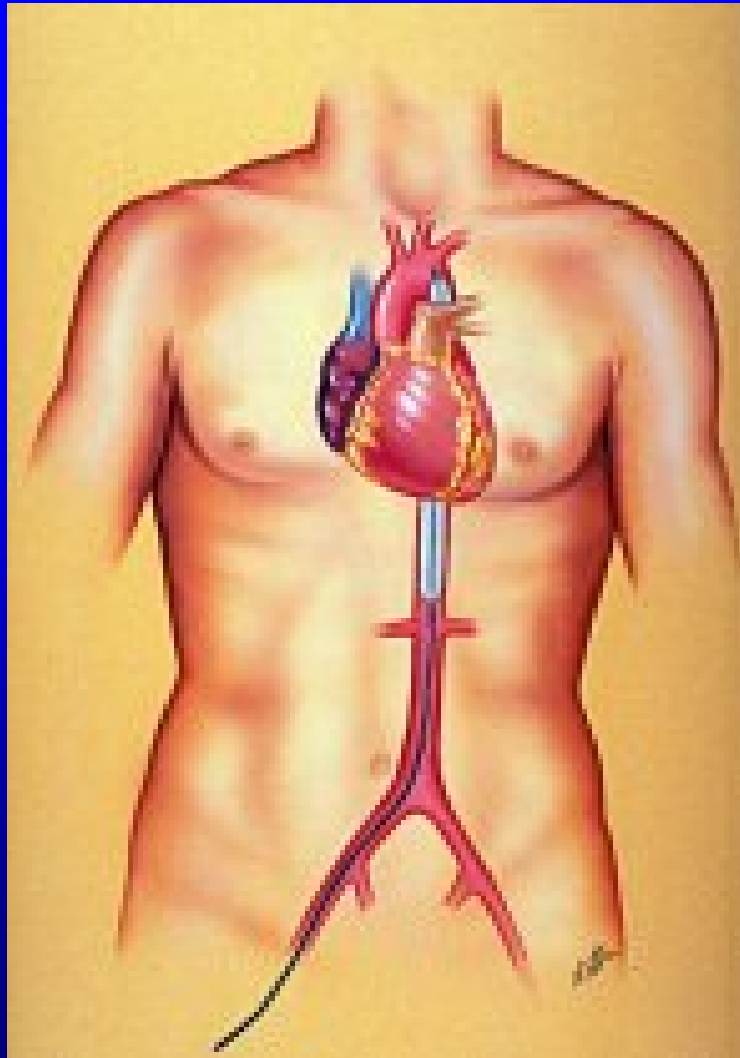


Werking IABP



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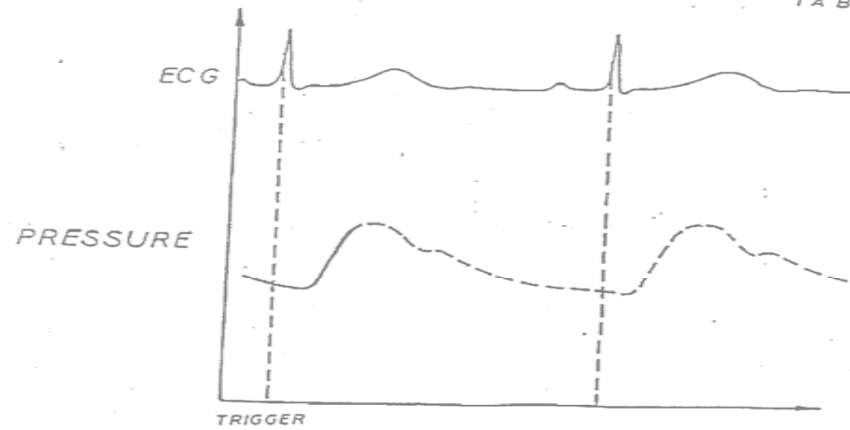
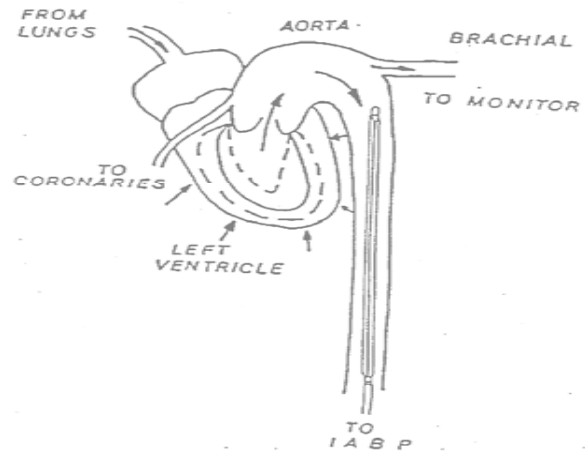
IABP



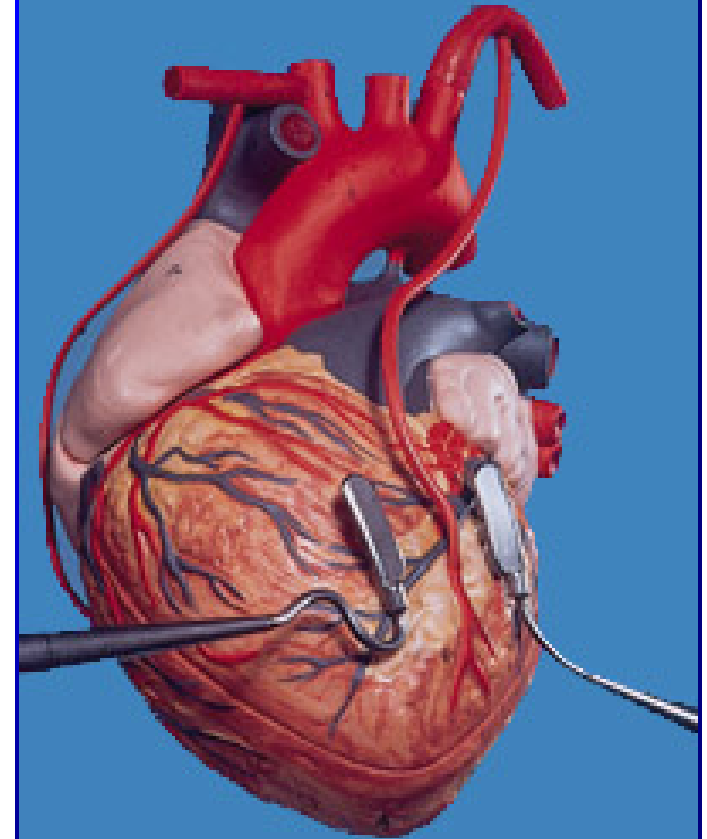
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IABP

I Left ventricle during systole
Balloon is deflated

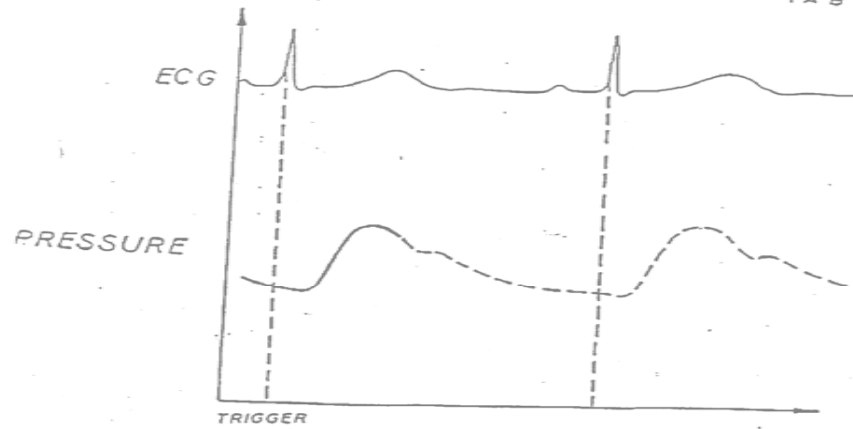
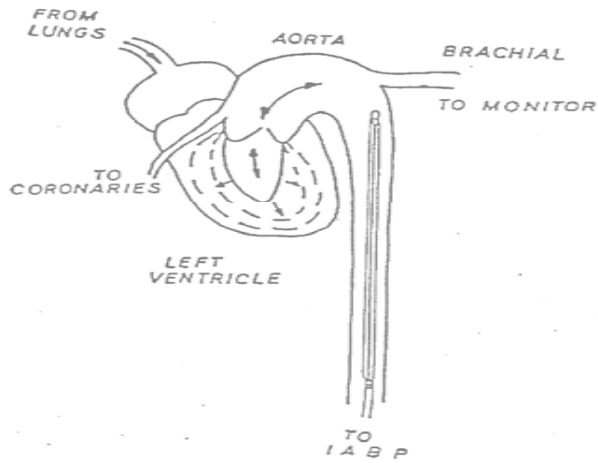


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IABP

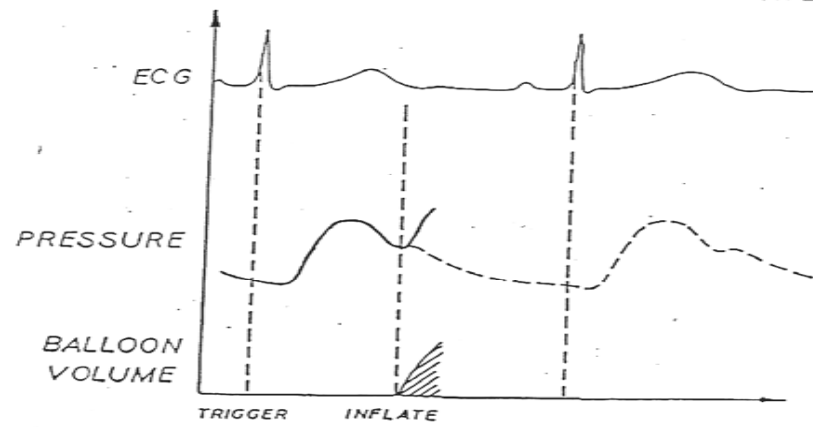
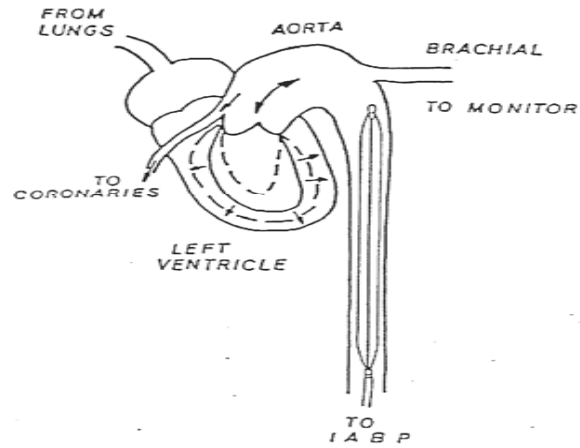
1f Left ventricle just after peak of systole.
Balloon remains deflated



1 - 1f

IABP

III. Aortic valve closure.
Balloon starts to inflate
Dicrotic notch caused by valve closure.

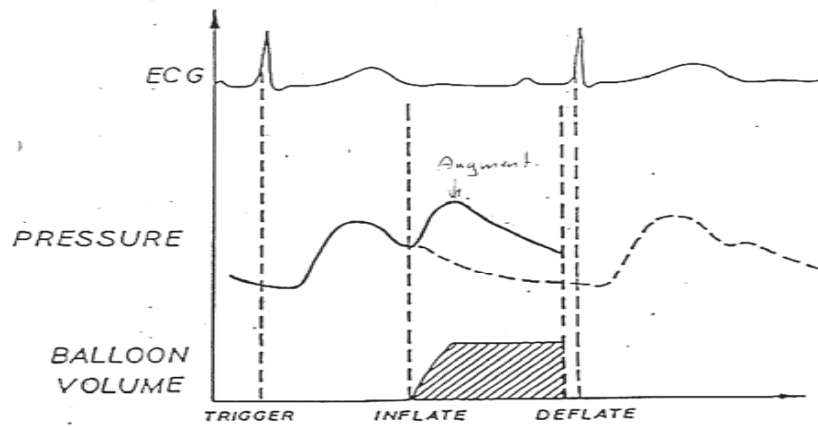
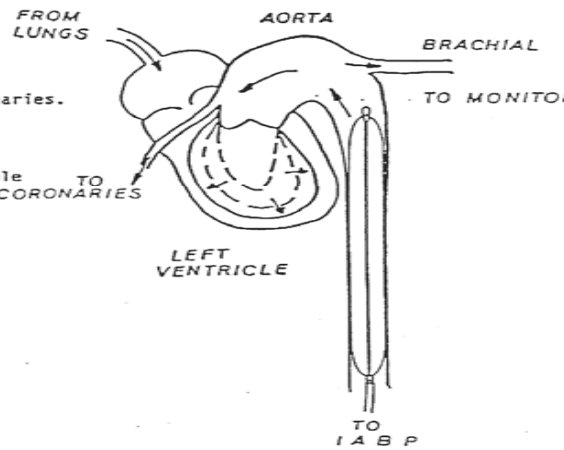


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IABP

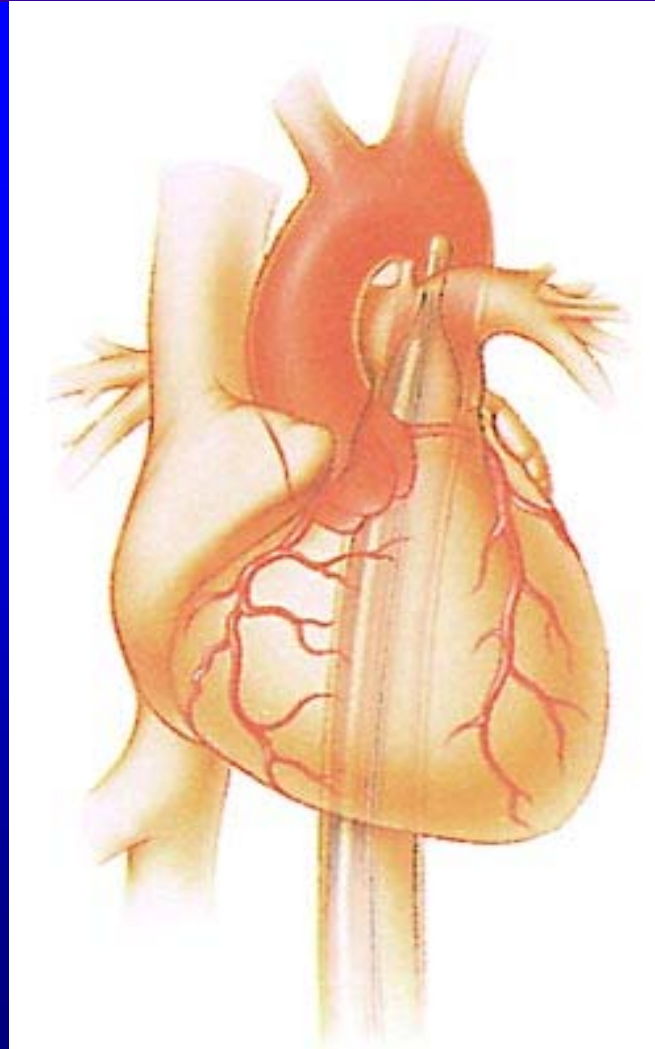
- IV. Left ventricle in diastole
Balloon is fully inflated
1. Diastolic Augmentation.
 2. Increased perfusion to coronaries.

NOTE: Aortic valve must be viable
in good state.



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IABP

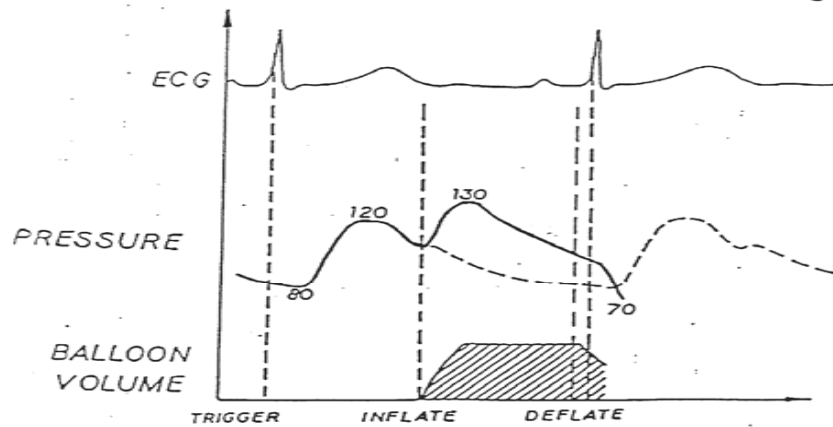
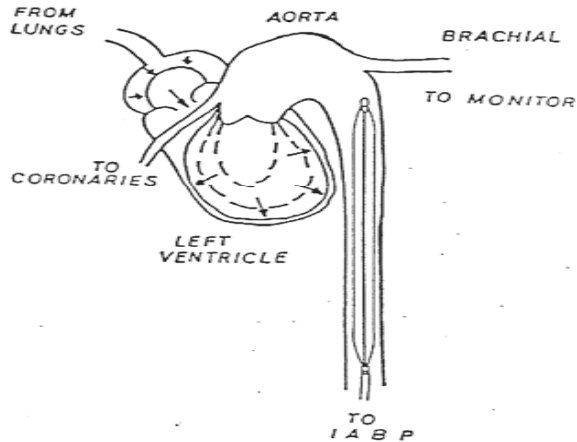


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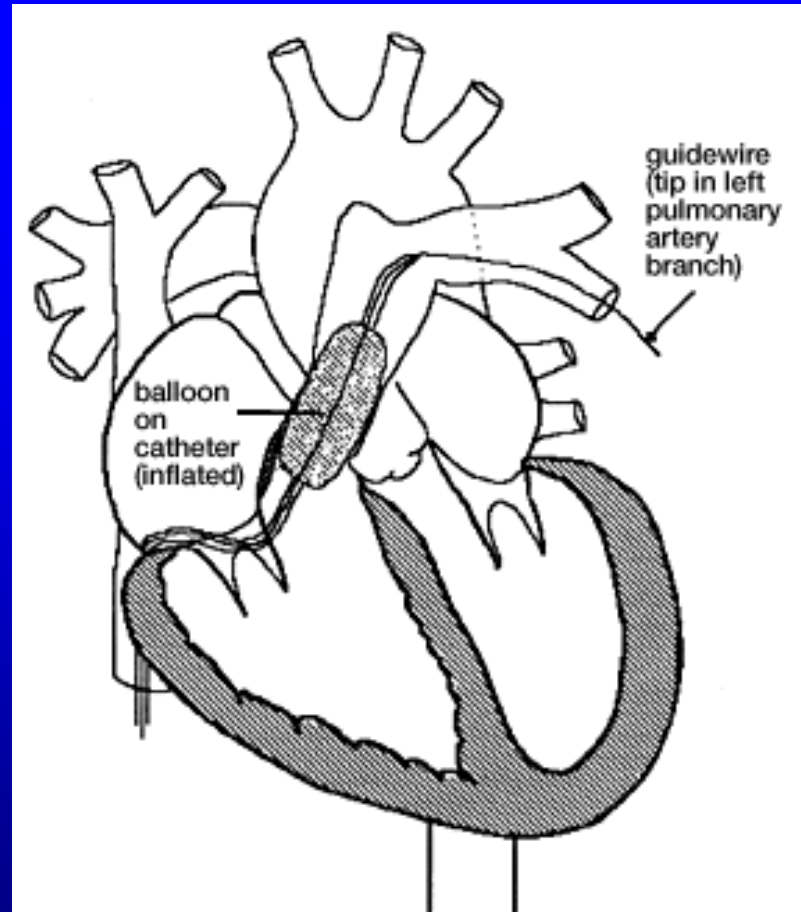
IABP

Left ventricle in late diastole
Balloon begins to deflate

1. Rapid reduction in Aortic pressure.
2. Pre systolic dip.
(In Aortic pressure)
3. Reduction of end diastolic pressure.
afterload reduction



IABP

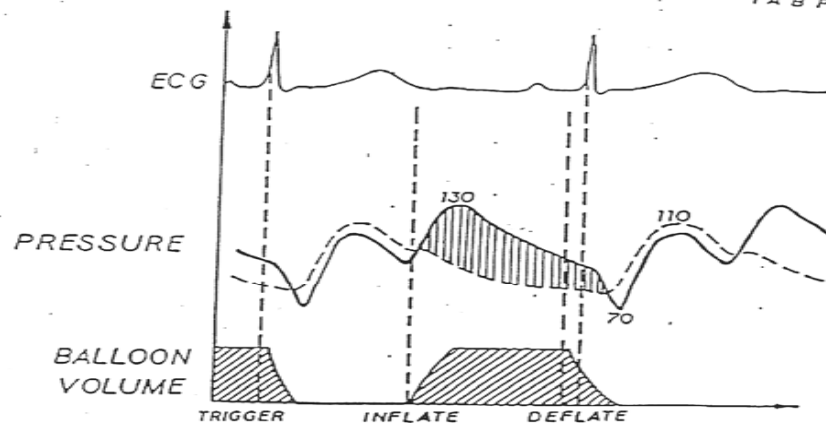
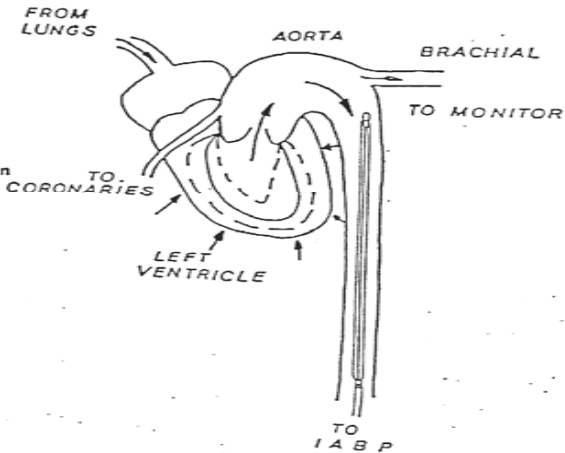


IABP

/I. Left ventricle in systole

Balloon fully deflates

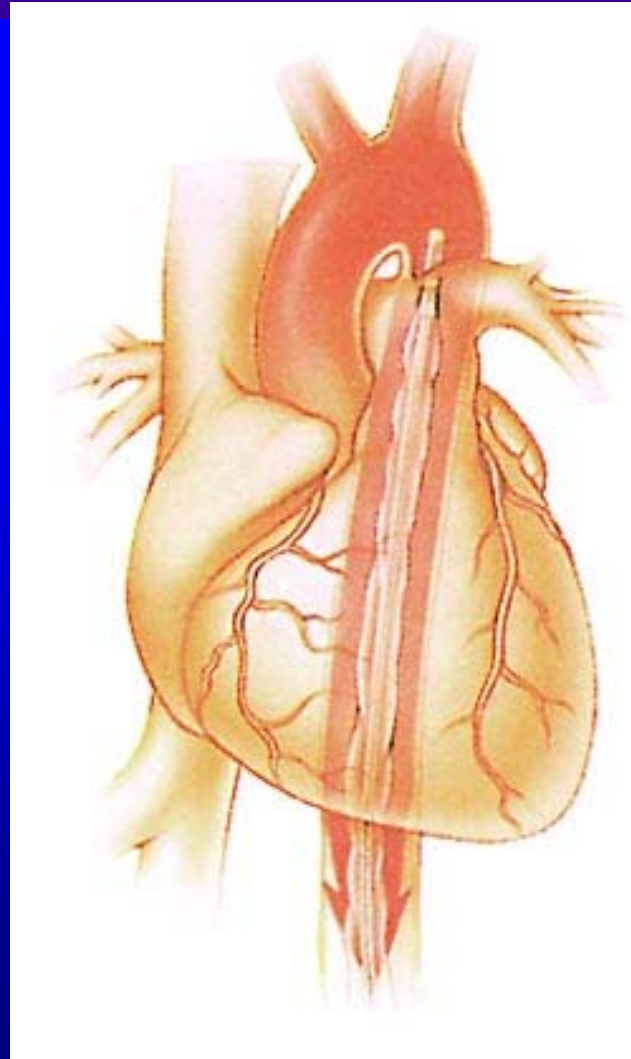
1. Ventricle pumps against reduced Aortic pressure.
2. Ventricular work-load is reduced.
3. Myocardial oxygen consumption is reduced.
4. Increased stroke volume--more blood is ejected.



1 - 15

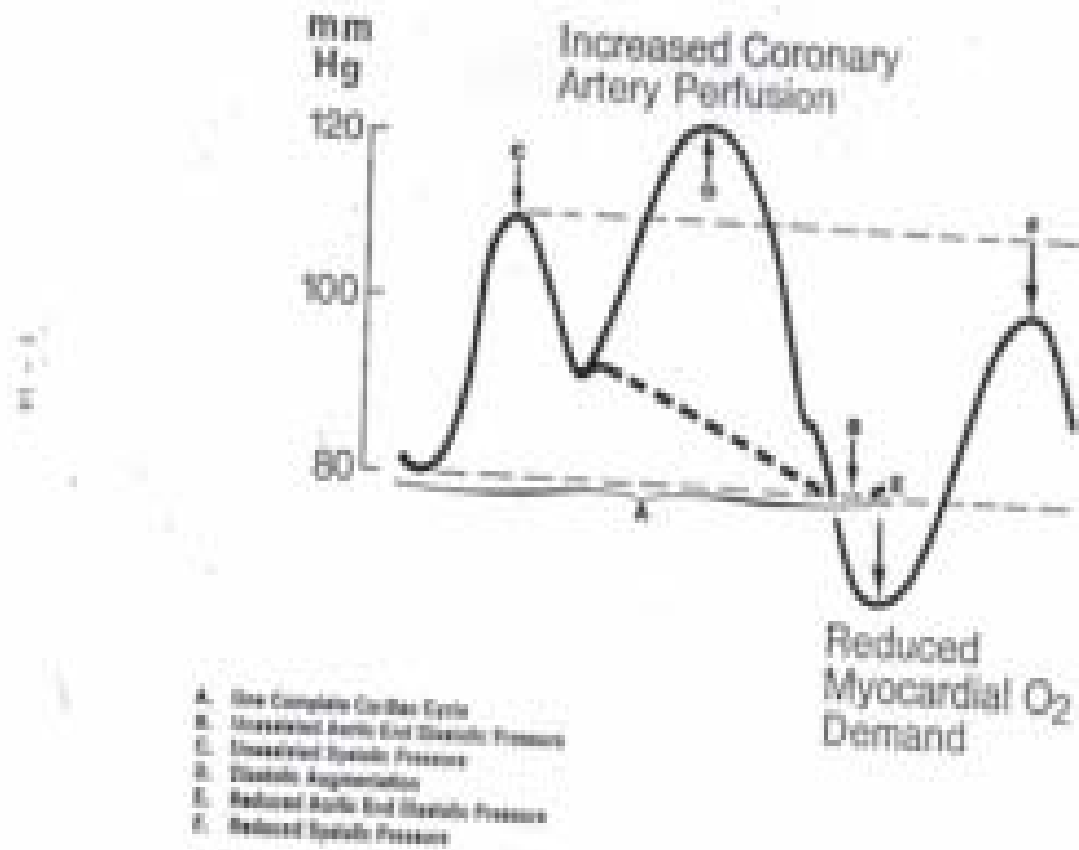
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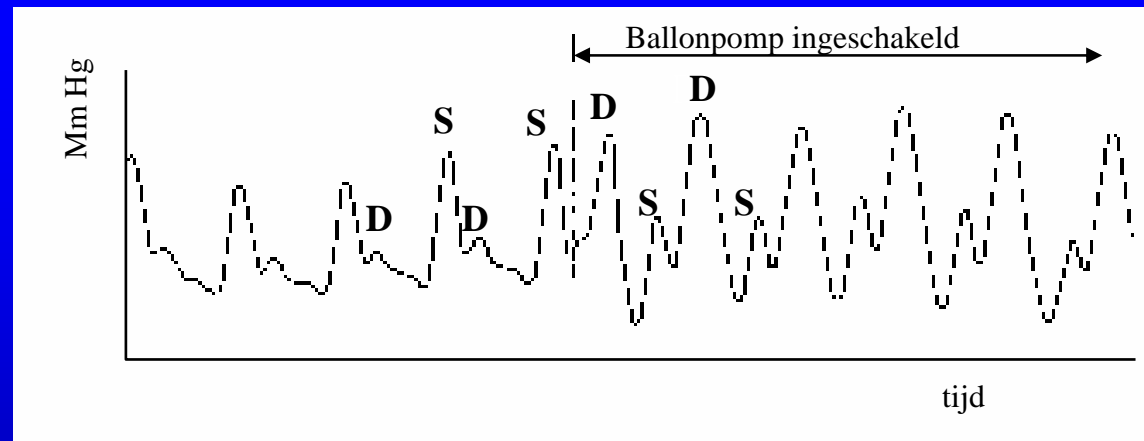


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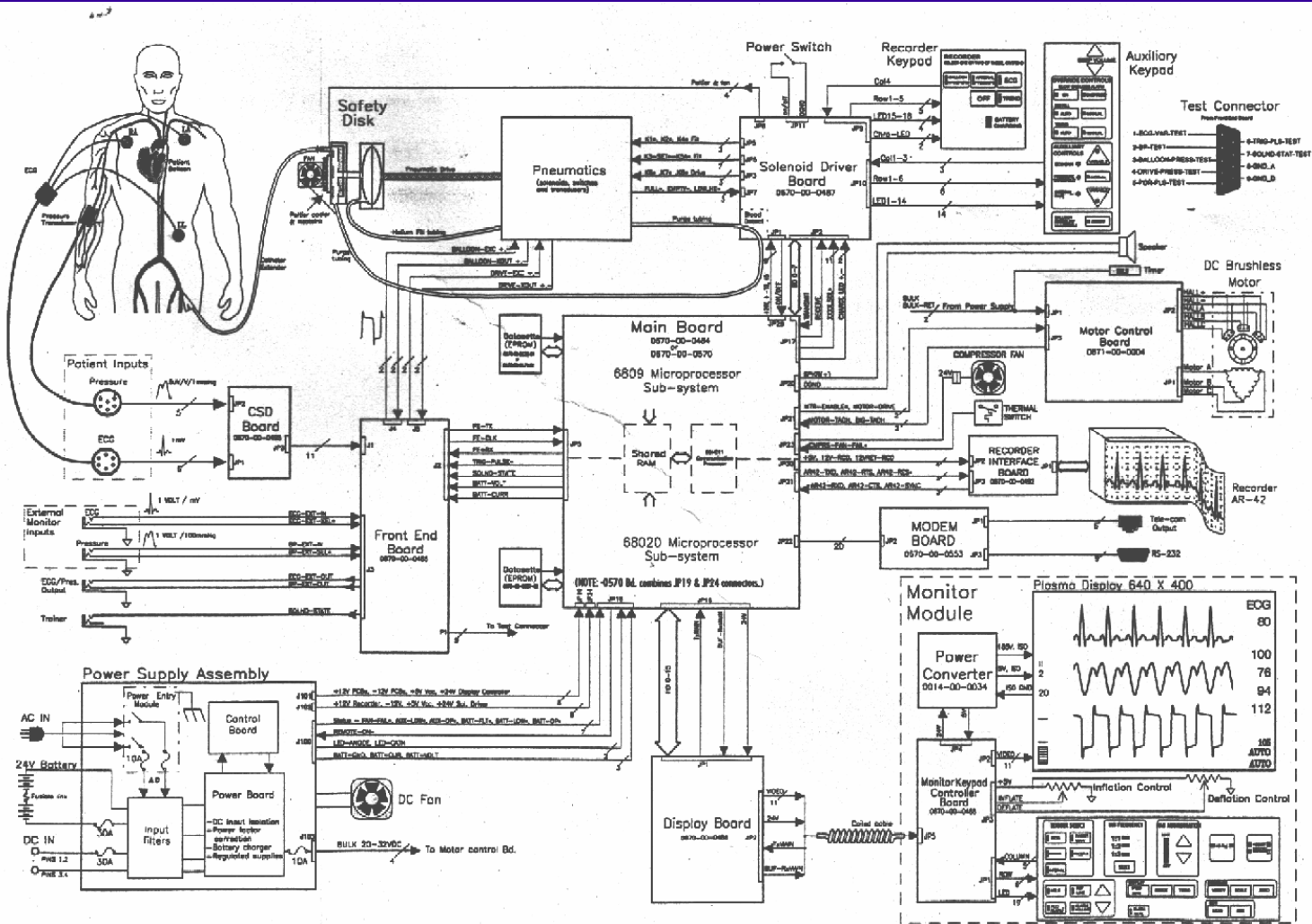


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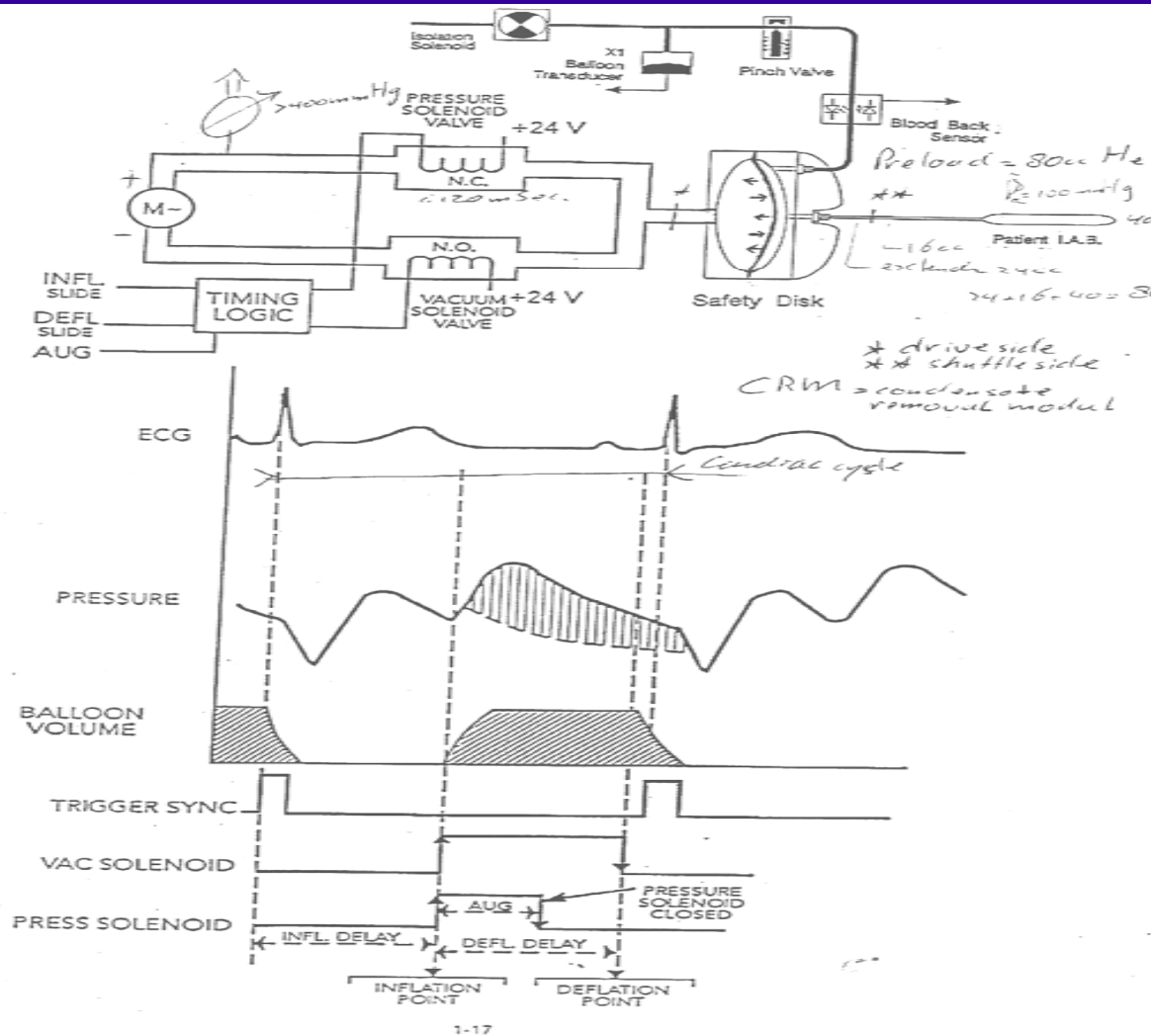
Systole en diastole druk met en zonder ballonpomp

De Techniek



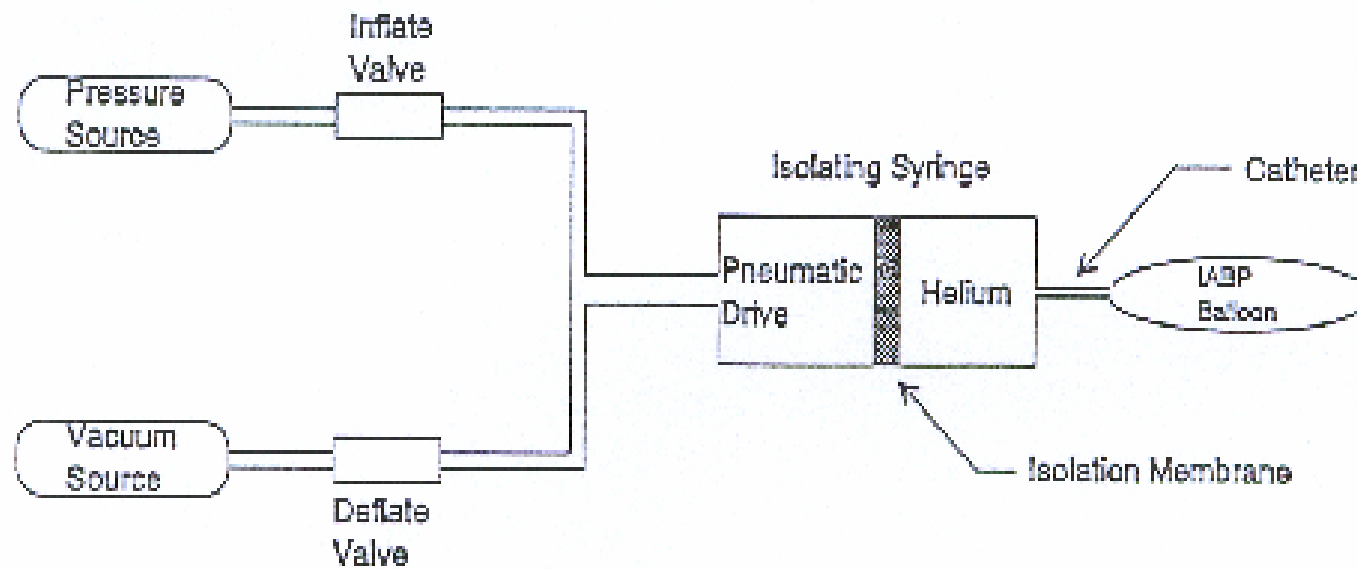
SYSTEM Block Diagram
Revised 08/1994

De Techniek in details

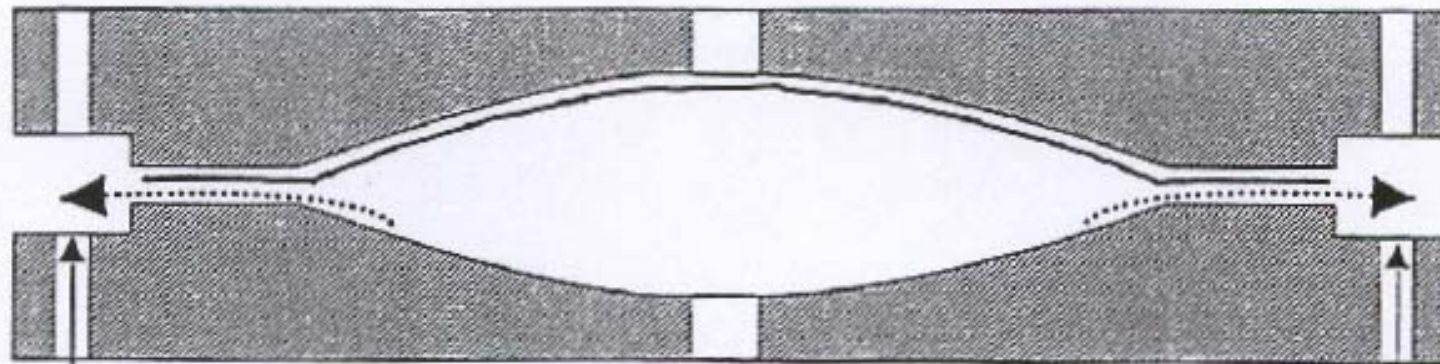


Simpel blokschema

Prior Art - "A Simplified Schematic"



De Safety-Disk



Bolt holes are placed outside of membrane radius to insure potential drive pressure leaks are vented to atmosphere, not across the isolation barrier.

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De Techniek



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