Thromboplastin time, Prothombin time,PT

General:

The prothrombin time tests the exogenous coagulation system (factors VII, X, V, II and I). PT indirectly reflects the protein synthesis activity of the liver since all these factors are synthesized in the liver. Vitamin K antagonists (coumarin/warfarin) disturb the synthesis of four procoagulatory effective coagulation factors II, VII, IX and X.

Indication:	Screening test for plasmatic coagulation disturbances (factor defect of the prothrombin complex, factor V, fibrinogen, at dysfibrinogenemia), monitoring vitamin K antagonist therapy (coumarin, marcumar), monitoring in vi-tamin K deficiency and liver diseases.
Material:	3.0 ml citrate plasma frozen
Preanalytics:	citrate blood in citrate-monovette, fill monovette up to the mark! Send immediately to the laboratory! Optional for dispatch: send frozen citrate plasma.
TAT:	same day,FML
Method:	COAG
Units:	%
Ref.- range:	70 – 120
Note:	The WHO recommended INR-value (International Normalized Ratio) is valid as a standardized result. The international sensitivity in-dex (ISI) value compares to a reference thromboplastin. ISI values at approx. 1.0 highly correspond to the WHO standard. The ISI value is range- and device-dependent and must be declared in instruction leaflets. Calculation: INR = [TPZPat (sec)/TPZCal (sec.)]^{ISI}
	Example: INR = [patient: 32.5 sec./normal: 11.1 sec.]$^{0.96}$ = 2.80
	The ratio anticoagulant (sodium citrate 3.8%) to blood must be exactly 1+9!

Relationship between INR and Prothrombin time (Quick), % values									
INR	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
%	100	51	33	25	20	16	14	12	11

Recommendations from the Australasian Society of Thrombosis and Hemostasis (2000):

Range of international normalized ratio (INR) recommended for specific applications of warfarin therapy*

Condition	INR range
Preventing DVT (high risk patients, like those who have had hip replacement)	2.0-3.0
Therapy after DVT or pulmonary embolism	2.0-3.0
Preventing systemic embolism - Atrial fibrillation - Valvular heart disease - After myocardial infarction - Tissue heart valves (first 3 months)	 2.0-3.0 2.0-3.0 2.0-3.0 2.0-3.0
Bileaflet mechanical heart valve (aortic)	2.5-3.5
Mechanical prosthetic heart valve (high risk)	3.0-4.5
Preventing recurrence of myocar-dial infarction	3.0-4.5
Thrombosis in antiphospholipid antibody syndrome	3.0-4.5

DVT = deep vein thrombo-sis

- Based largely on the 5th American College of Chest Physicians Consensus Conference and consistent with current recommenda-tions of the British Society for Hematology.

Risk of major bleeding (% per annum) and international normalized ratio (INR), findings of two studies.

INR	*Study 1*	*Study 2*
<2.0	3%	0
2.0-2.9	2%-3%	1%
3.0-3.9	2%-3%	3%
4.0-4.9	4%	4%
5.0-5.9	5%	50%
>= 6	5%-13%	

Risk of ischemic stroke in patients with atrial fibrillation (AF), grouped by age and other risk factors* (derived from Laupacis et al.)

Risk categories	*Patients affected per an-num*
Lone atrial fibrillation†	
Age < 60 years	0
Age 60-69 years	1.6%
Age 70-79 years	2.1%
Age >= 80 years	3.0%
Age < 65 years	
No risk factors	1.0%
One or more risk factors	4.9%
Age 65-75 years	
No risk factors	4.3%
One or more risk factors	5.7%
Age >75 years	
No risk factors	3.5%
One or more risk factors	8.1%

- Hypertension, diabetes, previous stroke or transient ischemic attack.
- Atrial fibrillation without transient ischemic attack or stroke, myocar-dial infarction, hypertension or heart failure.

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit http://www.fml-dubai.com/parameter-listings/