PROGETTO PROTESI D'ANCA

TROMBOSI VENOSA PROFONDA (TVP)

Epidemiologia
Sintomi & Segni
Diagnosi Strumentale
Diagnosi di Laboratorio
Profilassi & Terapia

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Specialista in Chirurgia Vascolare

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Che cosa è la TVP ?

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La *Trombosi Venosa* identifica l'occlusione di un vaso venoso in un qualsiasi distretto del nostro organismo.

La *Trombosi Venosa Profonda* è l'occlusione di un vaso venoso del circolo profondo e può interessare qualsiasi distretto.

Il *TROMBOEMBOLISMO VENOSO* è la terza più comune malattia cardiovascolare subito dopo l'ischemia miocardica e l'ictus cerebrale.

Le sedi più frequentemente interessate sono le Vene degli Arti Inferiori.

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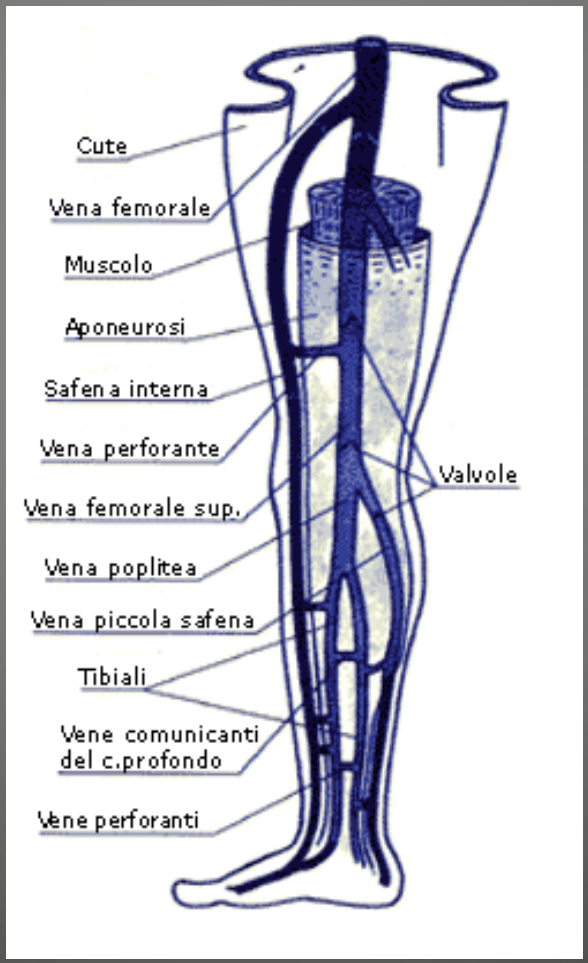
Il sistema venoso degli Arti Inferiori è composto da un sistema superficiale e dal sistema profondo.



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La Trombosi Venosa Profonda con le complicanze trombo-emboliche che ne possono derivare (*es. embolia polmonare*), costituisce una malattia seria e potenzialmente fatale che spesso complica il decorso clinico di soggetti affetti da altre patologie, ma che colpisce anche soggetti in apparenti condizioni di buona salute.

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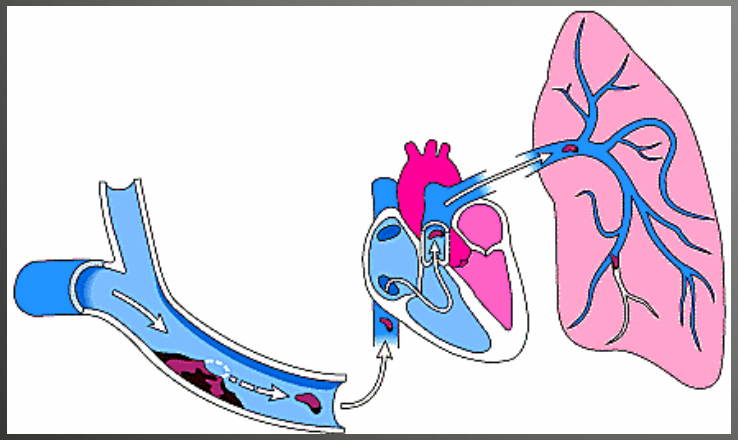
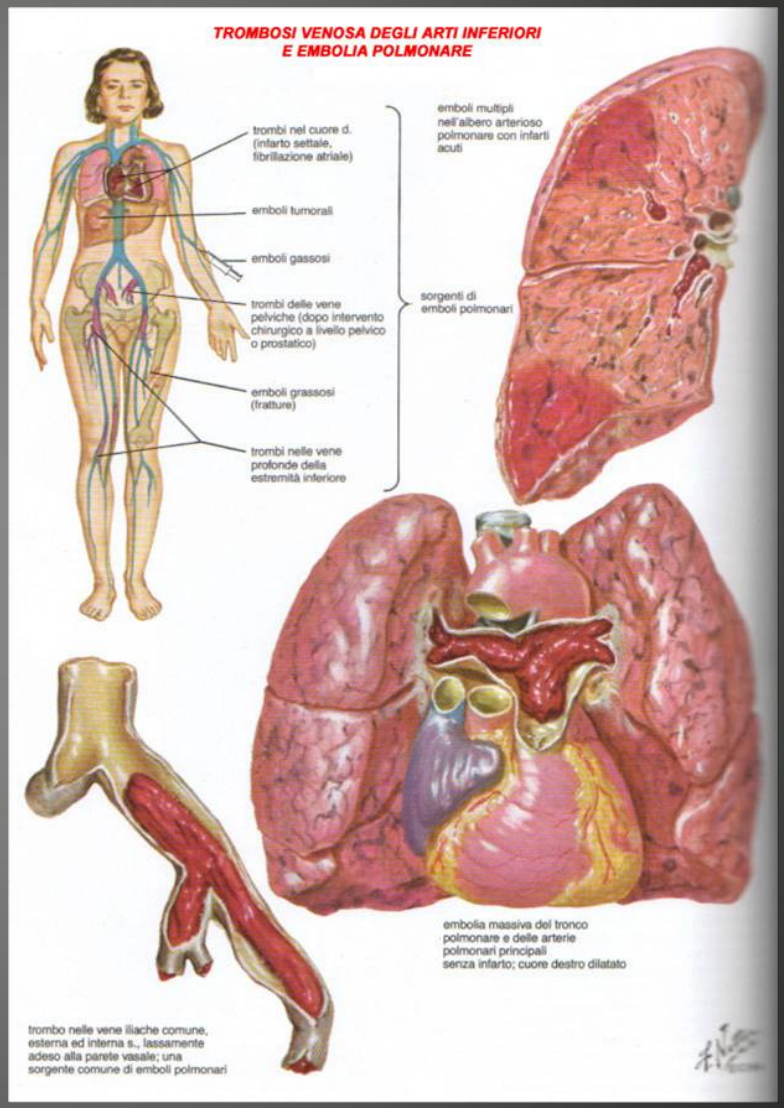
L' embolo polmonare è costituito da un coagulo ematico che in oltre il 95% dei casi si stacca da un trombo rosso a superficie liscia di una trombosi venosa profonda (*TVP*) delle vene al di sopra del ginocchio(poplitee, femorali, iliache) o da un trombo più distale non trattato, estesosi prossimalmente.





TROMBOSI VENOSA PROFONDA

EPIDEMIOLOGIA

- L'incidenza esatta delle *TROMBOSI VENOSE PROFONDE* non è nota a causa della diagnosi difficile, della relativa inattendibilità e della relativa scarsa specificità.
- *L'EMBOLIA POLMONARE*, comunemente secondaria a *TVP*, è di certo una delle più comuni cause di decesso ospedaliero.
- La *SINDROME POST-TROMBOTICA* è la complicanza cronica delle *TVP*, stimabile nel 1 - 1.5% della popolazione, con elevato numero di ulcere flebostatiche.

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EPIDEMIOLOGIA

Si stimano da 100.000 a 160.000 casi all'anno nella popolazione generale occidentale.

In Italia in particolare vengono osservati circa 50.000 casi all'anno.

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EPIDEMIOLOGIA

FREQUENZA (%) di TVP (*Medicina*)

❑ Ictus, arto paretico	60 - 70 %
❑ Ictus, arto non paretico	10 %
❑ Radioterapia	40 %
❑ Infarto Miocardico	5 - 20 %
❑ Ospedalizzazione preoperatoria	5 - 20 %
❑ Medicina Interna	10 - 15 %
❑ Malattie Infettive Croniche	5 %

Studi basati su test al fibrinogeno o flebografia

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FREQUENZA (%) di TVP (*Chirurgia*)

❑ Trauma Spinale	75 - 80 %
❑ Amputazione d'arto	60 - 70 %
❑ Chirurgia dell'anca	60 %
❑ Fratture dell'arto Inferiore	40 - 50 %
❑ Chirurgia maggiore del ginocchio	40 %
❑ Prostatectomia open	40 %
❑ Chirurgia generale addominale	30 %
❑ Trapianto renale	20 - 30 %
❑ Chirurgia toracica (non cardiaca)	30 %
❑ Neurochirurgia	25 %
❑ Meniscectomia aperta	20 - 25 %

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EPIDEMIOLOGIA

E' considerata una vera "*piaga sociale*" per l'alta invalidità lavorativa ed il costo sociale, è caratterizzata dal dolore sino a vera claudicatio venosa, dall'edema, dalle alterazioni del trofismo cutaneo sino alla liposclerosi ed alla ulcerazione.

Il 25 - 40 % delle ulcere flebostatiche è di origine post-trombotica.

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EPIDEMIOLOGIA

Sono a *rischio* le persone in cui si determini il processo caratterizzato dalla

TRIADE di VIRCHOW:

- Attivazione della coagulazione del sangue con produzione di trombina. Alterazione del sistema fibrinolitico.
- Alterazione della parete venosa (endotelio)
- Stasi venosa

associato a:

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EPIDEMIOLOGIA

Molte persone ospedalizzate sono a rischio.

Non tutti i pazienti ospedalizzati sono a rischio.

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RISCHI GENERALI

- ETA' SUPERIORE A 40 ANNI
- PREGRESSO TROMBOEMBOLISMO VENOSO
- PRESENZA DI INSUFFICIENZA VENOSA CRONICA
- OBESITA'
- PROLUNGATA IMMOBILITA'
- SEPSI
- TERAPIA ORMONALE SOSTITUTIVA (MENOPAUSA)
- TERAPIA ORMONALE (CONTRACCETTIVA)
- VIAGGI

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EPIDEMIOLOGIA

- RISCHI GENERALI
- RISCHI PARTICOLARI
- RISCHI SPECIFICI

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RISCHI GENERALI

TROMBOEMBOLISMO VENOSO PREGRESSO

Un episodio di TVP degli arti inferiori è il più importante fattore di rischio per un successivo episodio di TVP.

Per stabilire con certezza un pregresso episodio di TVP è necessario che ai sintomi e segni clinici sia stato associato almeno un esame diagnostico obiettivo:

Flebografia, EcoColorDoppler, Pletismografia.

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RISCHI GENERALI
INSUFFICIENZA VENOSA CRONICA

L'insufficienza venosa cronica (*IVC*) è la conseguenza di uno scompenso del funzionamento dei tronchi venosi periferici.

Si possono distinguere un'insufficienza del sistema venoso superficiale, del sistema venoso profondo, o di entrambi; tali situazioni provocano una ipertensione venosa a livello delle gambe e la stasi venosa localizzata o diffusa, con ripercussioni trofiche sulle strutture perivenose e soprattutto sulla microcircolazione; l'edema ne costituisce la manifestazione caratteristica.

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RISCHI GENERALI

Dalla TVP degli AA.II. Può derivare una IVC

Da una IVC può derivare una TVP

Journal of Orthopaedic Nursing (2007) 11, 169–176

ELSEVIER

Journal of
Orthopaedic Nursing

www.elsevierhealth.com/journals/joon

NICE guidelines on reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients undergoing surgery

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Table 1 VTE high risk surgical procedures

- Major orthopaedic surgery (total hip and knee replacement and hip fracture repair)
- Major general surgery
- Major gynaecological surgery
- Major urological surgery, inclusive of open urological procedures
- Neurosurgery
- Cardiothoracic surgery
- Major peripheral vascular surgery

Pharmacological prophylaxis

Pharmacological prophylaxis includes heparins, warfarin, pentasaccharides and antiplatelets.

Mechanical methods

Mechanical methods of prophylaxis include graduated compression stockings, intermittent pneumatic compression devices, foot impulse devices and electrical stimulation. Biophysiologically, all the mechanical methods of prophylaxis promote venous return and combat venous stasis, which is one of Virchow's triad in the causation of VTE (Cotton and Roberts, 1977).

Table 3 Efficacy and associated bleeding risk (NICE, 2007)

Pharmacological prophylaxis	DVT (RRR %)	PE (RRR%)	Bleeding risk (%)
UFH	56	30	46
LMWH	51	64	77
Warfarin (OAC)	51	82	58
Aspirin	31	—	30
Aspirin as adjuvant to UFH	17	—	47
Fondaparinux v LMWH	48	—	—

—, Inconclusive.

RRR, relative risk reduction.

Table 4 Summary of NICE (2007) VTE prophylaxis recommendations

Surgical speciality	No related risk factors	One or more related risk factors
Elective orthopaedic	Mechanical + LMWH or Fondaparinux	Mechanical + LMWH or Fondaparinux for 4 weeks
Hip fracture	Mechanical + LMWH or Fondaparinux for 4 weeks	Mechanical + LMWH or Fondaparinux for 4 weeks
General surgery	Mechanical	Mechanical + LMWH or Fondaparinux
Gynaecological	Mechanical	Mechanical + LMWH
Cardiac	Mechanical	Mechanical + LMWH
Thoracic	Mechanical	Mechanical + LMWH
Urological	Mechanical	Mechanical + LMWH
Neurosurgical	Mechanical	Mechanical + LMWH
Vascular	Mechanical	Mechanical + LMWH

Prevention of Venous Thromboembolism in Orthopedic Surgery Patients

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Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines

AMERICAN COLLEGE OF CHEST PHYSICIANS

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

- VTE is a serious but decreasing complication following orthopedic surgery
- This guideline focuses on optimal prophylaxis to reduce patient-important outcomes such as PE and symptomatic DVT
- Estimated nonfatal, symptomatic VTE rates after major orthopedic surgery are:

	Initial Prophylaxis, Postoperative Days 0-14	Extended Prophylaxis, Postoperative Days 15-35	Cumulative, Postoperative Days 0-35
No prophylaxis	VTE 2.80% (PE 1.00%, DVT 1.80%)	VTE 1.50% (PE 0.50%, DVT 1.00%)	VTE 4.3% (PE 1.50%, DVT 2.80%)
LMWH	VTE 1.15% (PE 0.35%, DVT 0.80%)	VTE 0.65% (PE 0.20%, DVT 0.45%)	VTE 1.8% (PE 0.55%, DVT 1.25%)

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

In patients undergoing total hip arthroplasty (THA) or total knee arthroplasty (TKA), we recommend use of one of the following for a minimum of 10 to 14 days rather than no antithrombotic prophylaxis: low-molecular-weight heparin (LMWH), fondaparinux, apixaban, dabigatran, rivaroxaban, low-dose unfractionated heparin (LDUH), adjusted-dose vitamin K antagonist (VKA), aspirin (all Grade 1B), or an intermittent pneumatic compression device (IPCD) (Grade 1C).

Remarks: We recommend the use of only portable, battery-powered devices capable of recording and reporting proper wear time on a daily basis for inpatients and outpatients. Efforts should be made to achieve 18 h of daily compliance. One panel member believed strongly that aspirin alone should not be included as an option.

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

In patients undergoing hip fracture surgery (HFS), we recommend use of one of the following rather than no antithrombotic prophylaxis for a minimum of 10 to 14 days: LMWH, fondaparinux, LDUH, adjusted-dose VKA, aspirin (all Grade 1B)**, or an IPCD** (Grade 1C)**.**

Remarks: We recommend the use of only portable, battery-powered devices capable of recording and reporting proper wear time on a daily basis for inpatients and outpatients. Efforts should be made to achieve 18 h of daily compliance. One panel member believed strongly that aspirin alone should not be included as an option.

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

For patients undergoing major orthopedic surgery (THA, TKA, HFS) and receiving LMWH as thromboprophylaxis, we recommend starting either 12 or more hours preoperatively or postoperatively rather than within 4 h or less preoperatively or postoperatively (Grade 1B)**.**

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

In patients undergoing THA or TKA, irrespective of the concomitant use of an IPCD or length of treatment, we suggest the use of LMWH in preference to the other agents we have recommended as alternatives: fondaparinux, apixaban, dabigatran, rivaroxaban, LDUH (all Grade 2B)**, adjusted-dose VKA, or aspirin** (all Grade 2C)**.**

Remarks: If started preoperatively, we suggest administering LMWH ≥12 h before surgery. Patients who place a high value on avoiding the inconvenience of daily injections with LMWH and a low value on the limitations of alternative agents are likely to choose an alternative agent. Limitations of alternative agents include the possibility of increased bleeding (which may occur with fondaparinux, rivaroxaban, and VKA), possible decreased efficacy (LDUH, VKA, aspirin, and IPCD alone), and lack of long-term safety data (apixaban, dabigatran, and rivaroxaban). Furthermore, patients who place a high value on avoiding bleeding complications and a low value on its inconvenience are likely to choose an IPCD over the drug options.

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

For patients undergoing major orthopedic surgery, we suggest extending thromboprophylaxis in the outpatient period for up to 35 days from the day of surgery rather than for only 10 to 14 days (Grade 2B)**.**

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

In patients undergoing major orthopedic surgery, we suggest using dual prophylaxis with an antithrombotic agent and an IPCD during the hospital stay (Grade 2C)**.**

Remarks: We recommend the use of only portable, battery-powered devices capable of recording and reporting proper wear time on a daily basis for inpatients and outpatients. Efforts should be made to achieve 18 h of daily compliance. Patients who place a high value on avoiding the undesirable consequences associated with prophylaxis with both a pharmacologic agent and an IPCD are likely to decline use of dual prophylaxis.

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

In patients undergoing major orthopedic surgery and increased risk of bleeding, we suggest using an IPCD or no prophylaxis rather than pharmacologic treatment (Grade 2C)**.**

Remarks: We recommend the use of only portable, battery-powered devices capable of recording and reporting proper wear time on a daily basis for inpatients and outpatients. Efforts should be made to achieve 18 h of daily compliance. Patients who place a high value on avoiding the discomfort and inconvenience of IPCD and a low value on avoiding a small absolute increase in bleeding with pharmacologic agents when only one bleeding risk factor is present (in particular the continued use of antiplatelet agents) are likely to choose pharmacologic thromboprophylaxis over IPCD.

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

In patients undergoing major orthopedic surgery and who decline or are uncooperative with injections or an IPCD, we recommend using apixaban or dabigatran (alternatively rivaroxaban or adjusted-dose VKA if apixaban or dabigatran are unavailable) rather than alternative forms of prophylaxis (all Grade 1B)**.**

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

In patients undergoing major orthopedic surgery, we suggest against using inferior vena cava (IVC) filter placement for primary prevention over no thromboprophylaxis in patients with an increased bleeding risk or contraindications to both pharmacologic and mechanical thromboprophylaxis (Grade 2C).

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

For asymptomatic patients following major orthopedic surgery, we recommend against Doppler (or duplex) ultrasound (DUS) screening before hospital discharge (Grade 1B)**.**

Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)

We suggest no prophylaxis rather than pharmacologic thromboprophylaxis in patients with isolated lower-leg injuries requiring leg immobilization (Grade 2C)**.**

Endorsing Organizations

This guideline has received the endorsement of the following organizations:

- American Association for Clinical Chemistry
- American College of Clinical Pharmacy
- American Society of Health-System Pharmacists
- American Society of Hematology
- International Society of Thrombosis and Hemostasis

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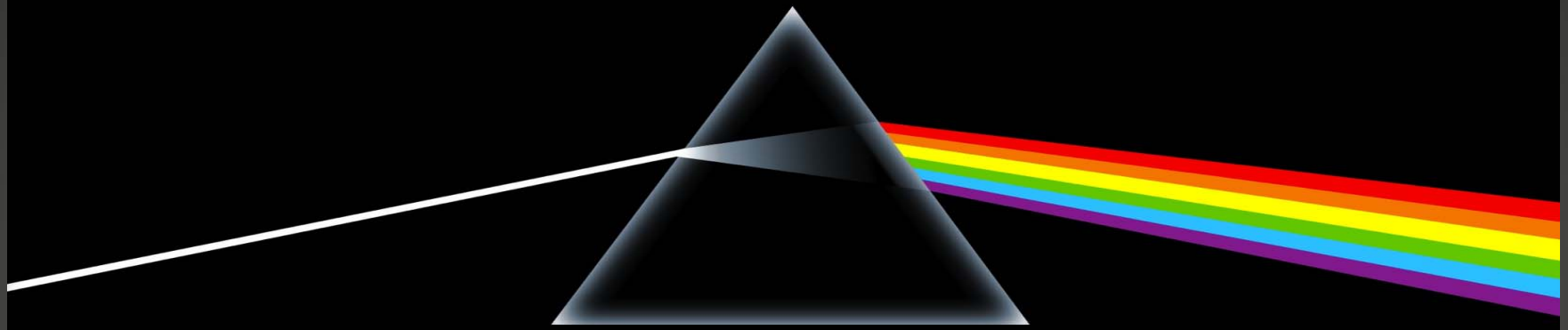

GRAZIE PER L’ATTENZIONE

…….And if the band you're in starts playing different tunes
I'll see you on the dark side of the moon……