TWYDIL®
RESEARCH, QUALITY AND HORSE SENSE

EQUINE SCIENCE

ETHICS and DOPING
Focus on cobalt

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Cobalt inquiry: Horses given 'unknown' injections

December 21, 2015

Read later

Horse racing trainers resigned to bans for cobalt

THE AUSTRALIAN | JANUARY 20, 2016 12:00AM

SAVE

IS COBALT A KILLER IN HORSES?

Australian Vets Condemn Cobalt Misuse in Horses

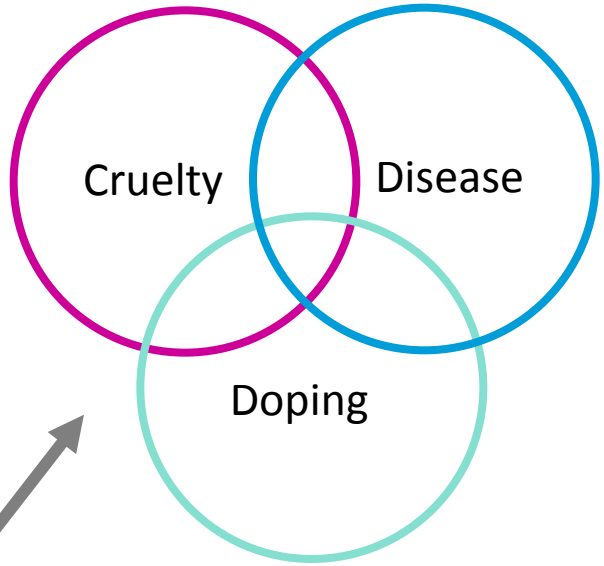
By Edited Press Release | Dec 11, 2015 | Topics: Medications, Thoroughbred Racing, Drug Testing, Horse Industry News

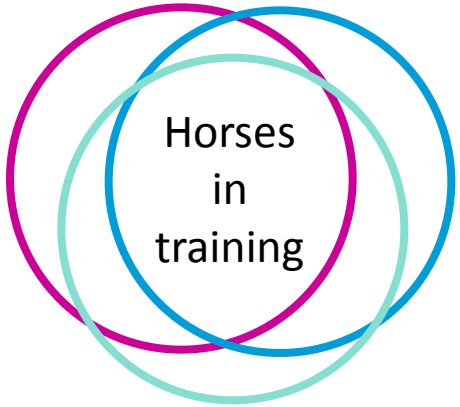
Ethics is a question of recognized values, for example:

Health

Well-Being

Performance

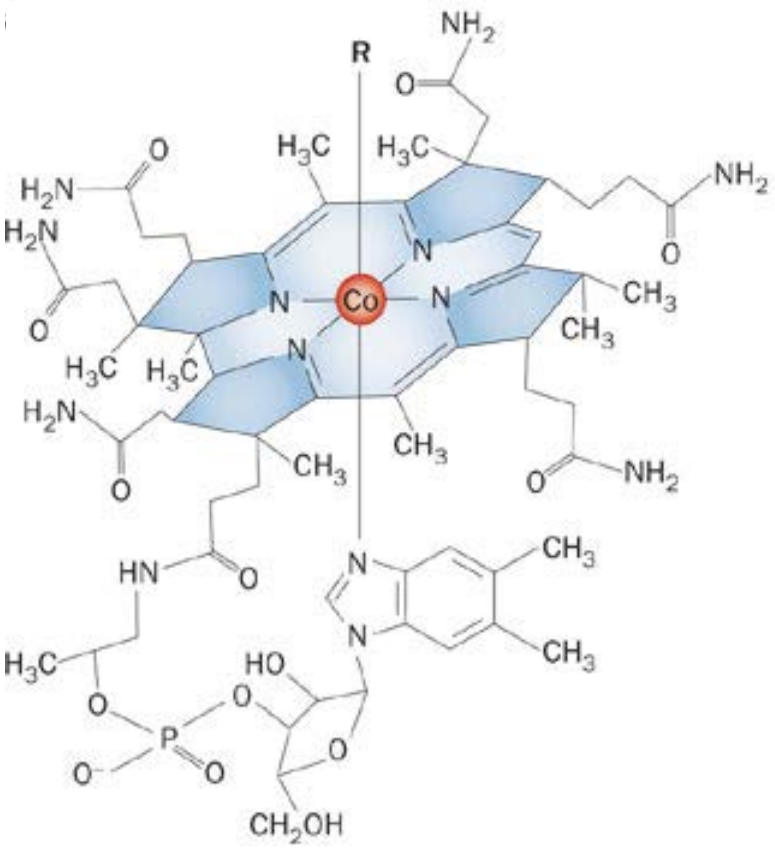




Public point of view

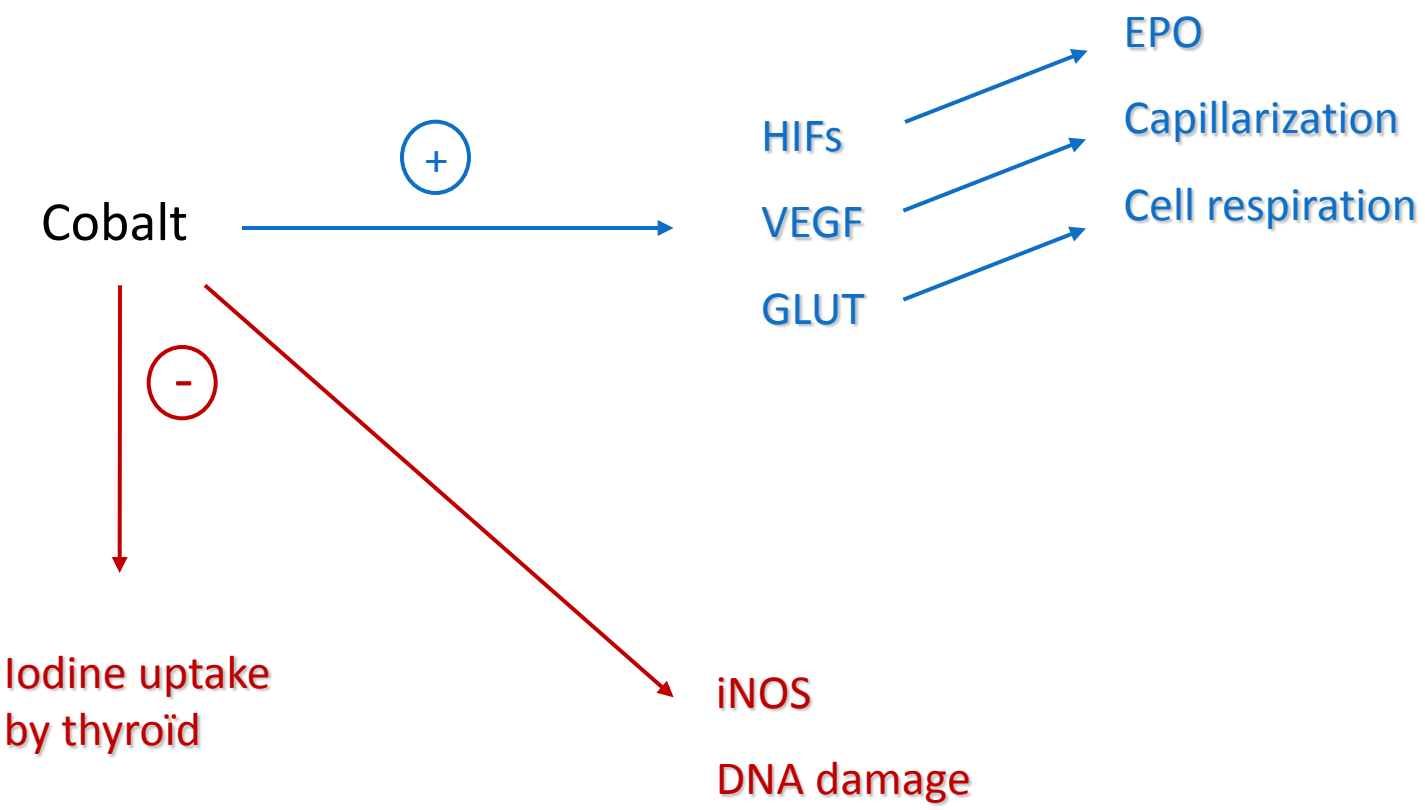
Professional point of view

FOCUS ON COBALT



- Cobalt :
  - Mineral element component of B12 vitamin (cobalamin)
  - Essential for red blood cell formation
  - Induces numerous genes expressions, but will rapidly be toxic
- Cobalamin is not able to enhance performance except if deficiency is diagnosed

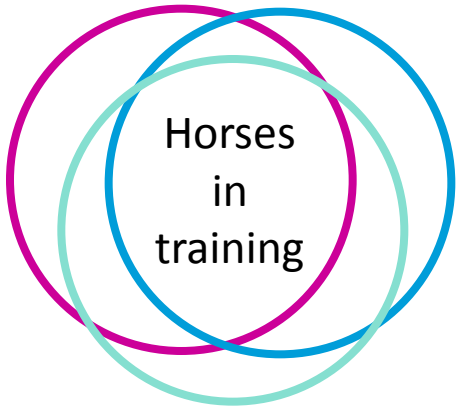
FOCUS ON COBALT



FOCUS ON COBALT

- Nutritionally a horse needs
  - 1mg/day at rest
  - 7mg/day in full training

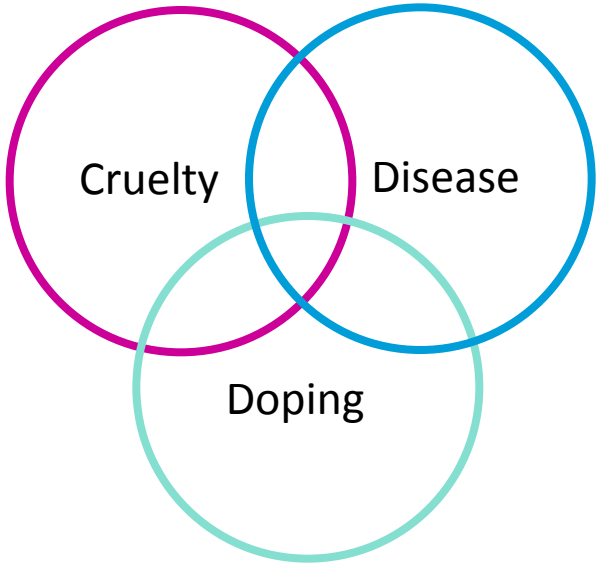
- Legally EuroLex indicates a maximal daily intake of 10mg in additional feeds.



FOCUS ON COBALT

- But cobalt in equine also supports performance and can be detrimental to health and well-being

- 40mg is a subtoxic dose



FOCUS ON COBALT

- Extended level of cobalt in equine is considered doping
- A level of 100ηg/ml of cobalt in urine seems to be the upper limit in Europe.
- Additionally 25ηg/ml of cobalt in plasma is also a relevant threshold (US).

FOCUS ON COBALT

- Daily needs for a horse in training: 7 mg

- TWYDIL RACING: 3.5mg/day
- TWYDIL HEMATINIC: 5 to 6 mg/day
- TWYDIL HEMOPAR: 0.5mg/day

- 2 forms: Cobalamin (vit B12) or inorganic sources of Co++

Effect of TWYDIL HEMATINIC

Purposes:

Effect of TWYDIL HEMATINIC on blood parameters

1. Evaluation of the TWYDIL HEMATINIC components bioavaibility

2. Evaluation on healthy horses of the impact of the supplement on red blood cells regenerative mechanism

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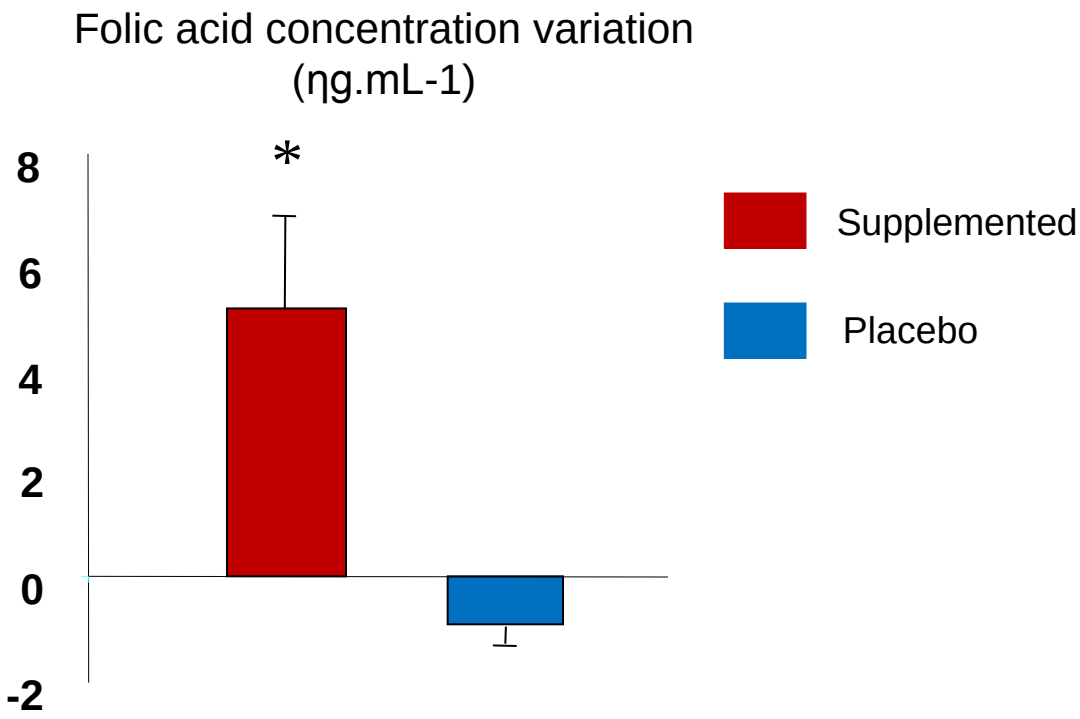
Effect of TWYDIL HEMATINIC on blood parameters

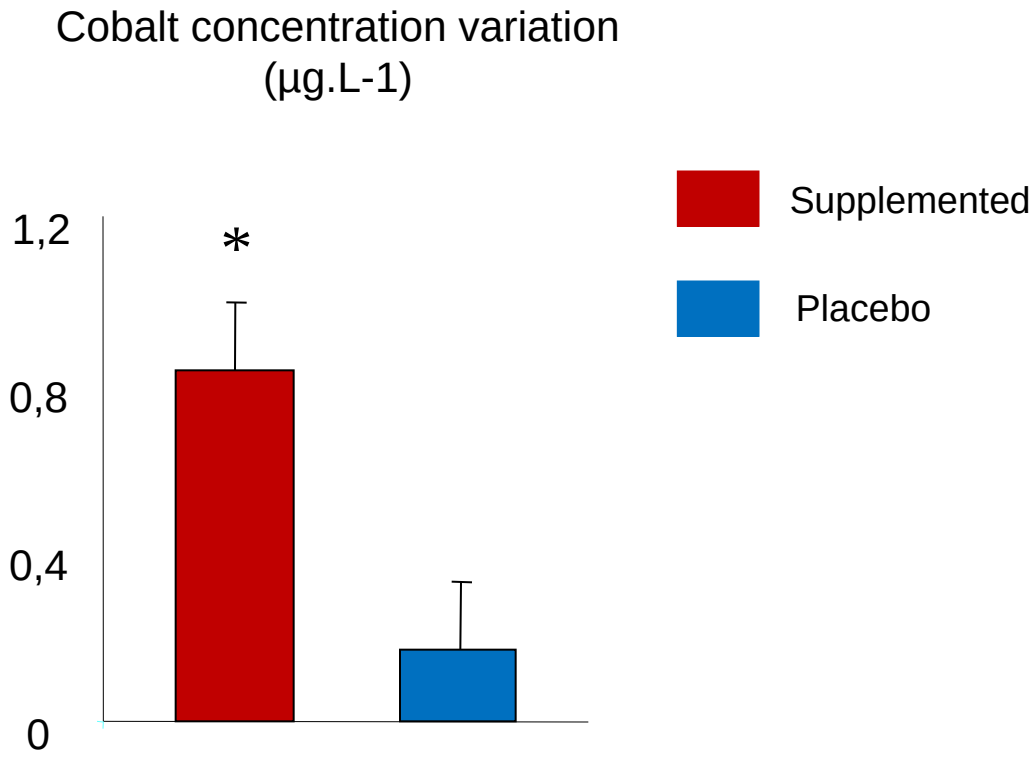
1. Evaluation of the TWYDIL HEMATINIC components bioavaibility



Purposes:

Effect of TWYDIL HEMATINIC on blood parameters

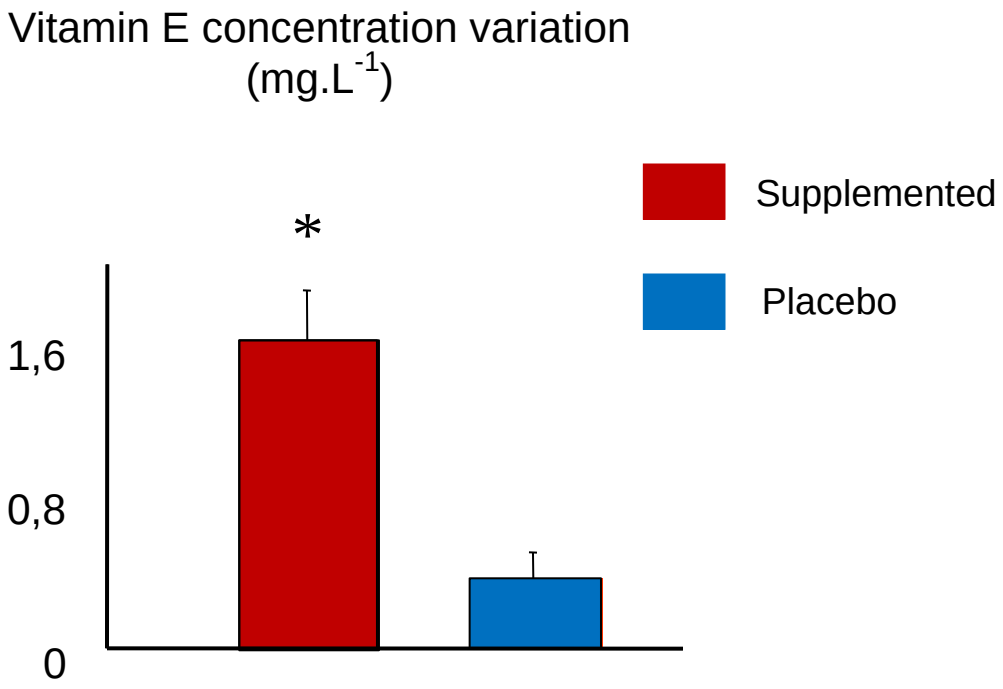
1. Evaluation of the TWYDIL HEMATINIC components bioavaibility



Purposes:

Effect of TWYDIL HEMATINIC on blood parameters

1. Evaluation of the TWYDIL HEMATINIC components bioavaibility

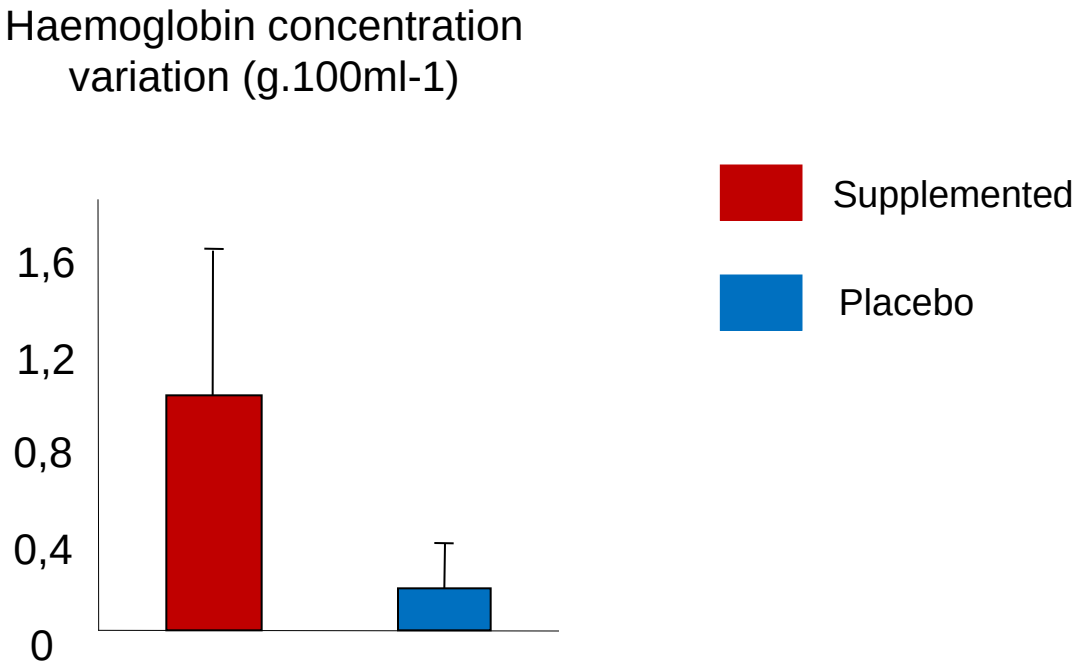


10 days of TWYDIL HEMATINIC (Co++ 6.8mg) allow a significant increase of red blood cells constitutive elements and protective factors.

Purposes:

Effect of TWYDIL HEMATINIC on blood parameters

2. Impact on red blood cells regeneration

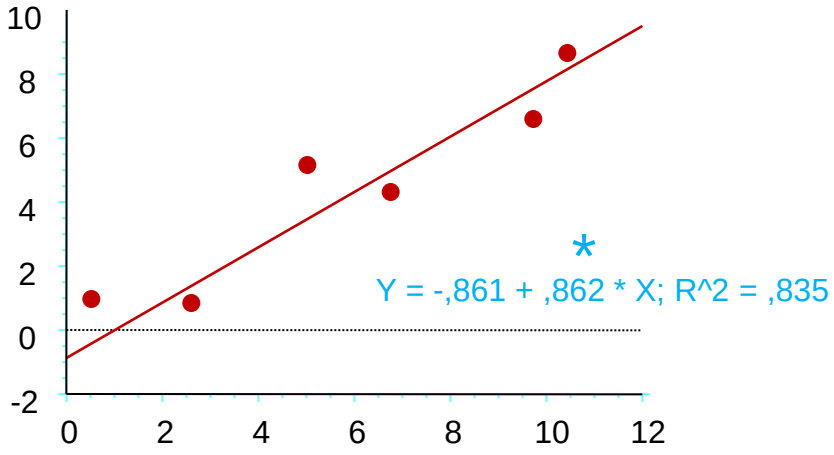


Purposes:

Effect of TWYDIL HEMATINIC on blood parameters

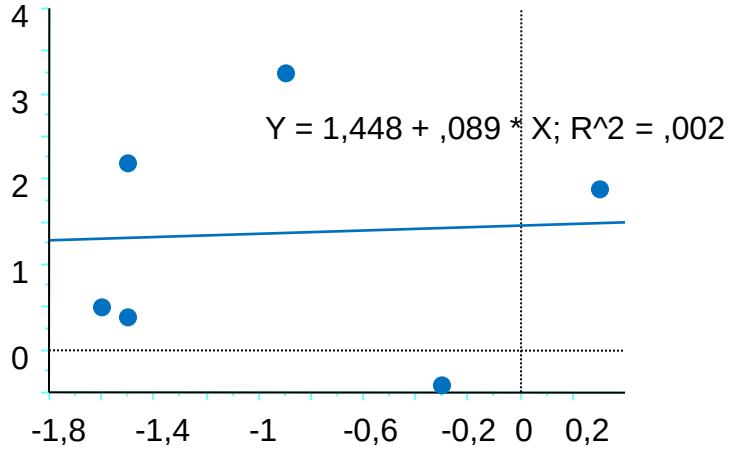
2. Impact on red blood cells regeneration

Haematocrit variation in supplemented group (%)



Folic acid concentration variation in supplemented group (ηg.mL-1)

Haematocrit variation in placebo group (%)



Folic acid concentration variation in placebo group (ηg.mL-1)

- A 10 day supplementation with TWYDIL HEMATINIC seems to support red blood cells regenerative mechanism
- in healthy and aneamic horses without any risk of toxicity or even congestion
- this efficacy is mostly linked to the folic acid intake.

Effect of TWYDIL program / Cobalt

Purposes:

Effect of TWYDIL program on cobalt concentration

Evaluation of urine and plasmatic level of cobalt

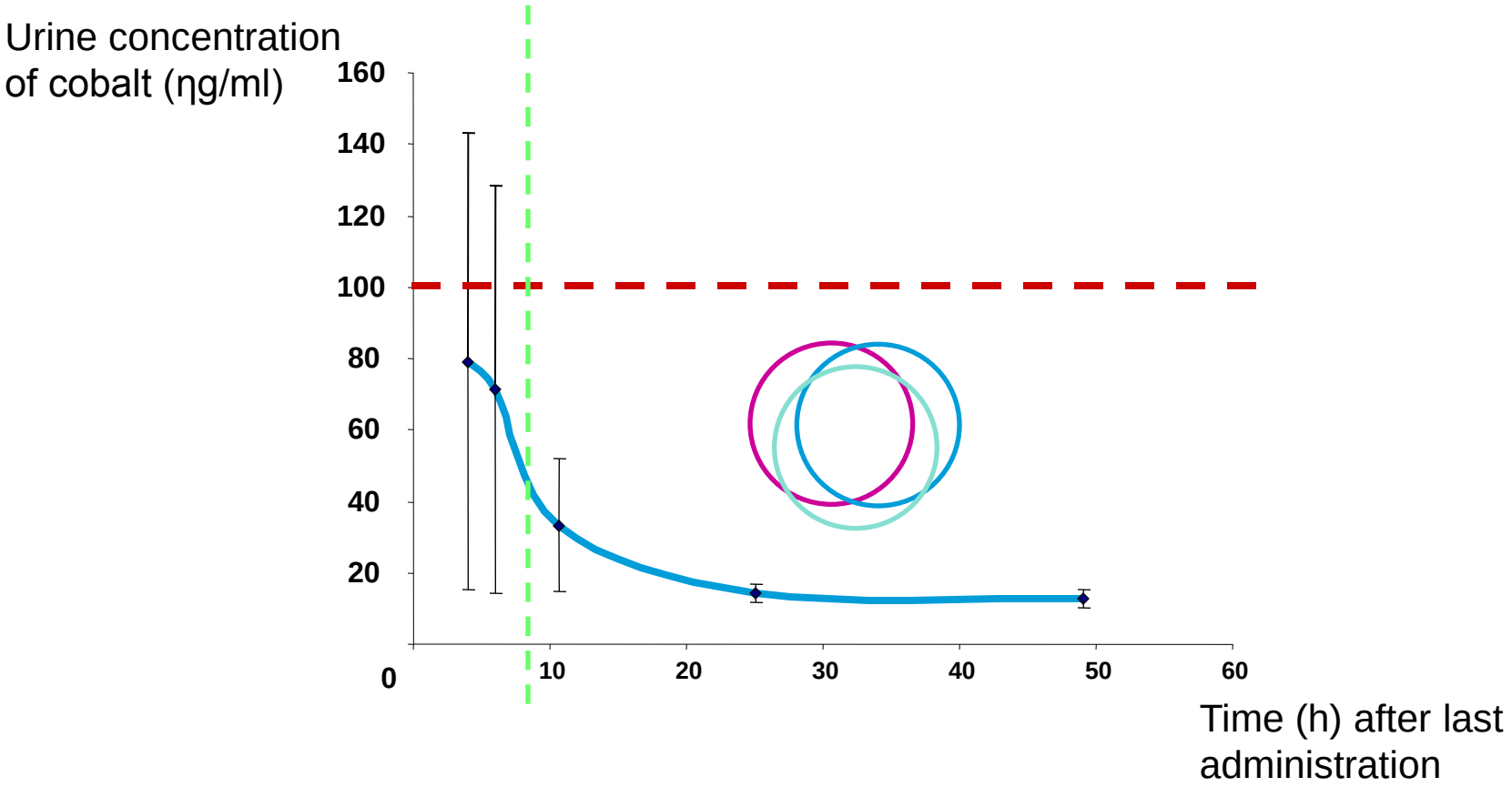
during 10 days of TWYDIL RACING and TWYDIL HEMATINIC administration

corresponding to a total amount of 11 mg of cobalt per day

Purposes:

Effect on concentration of cobalt

1. Impact on urine concentration of 11mg of cobalt after 10 days of administration

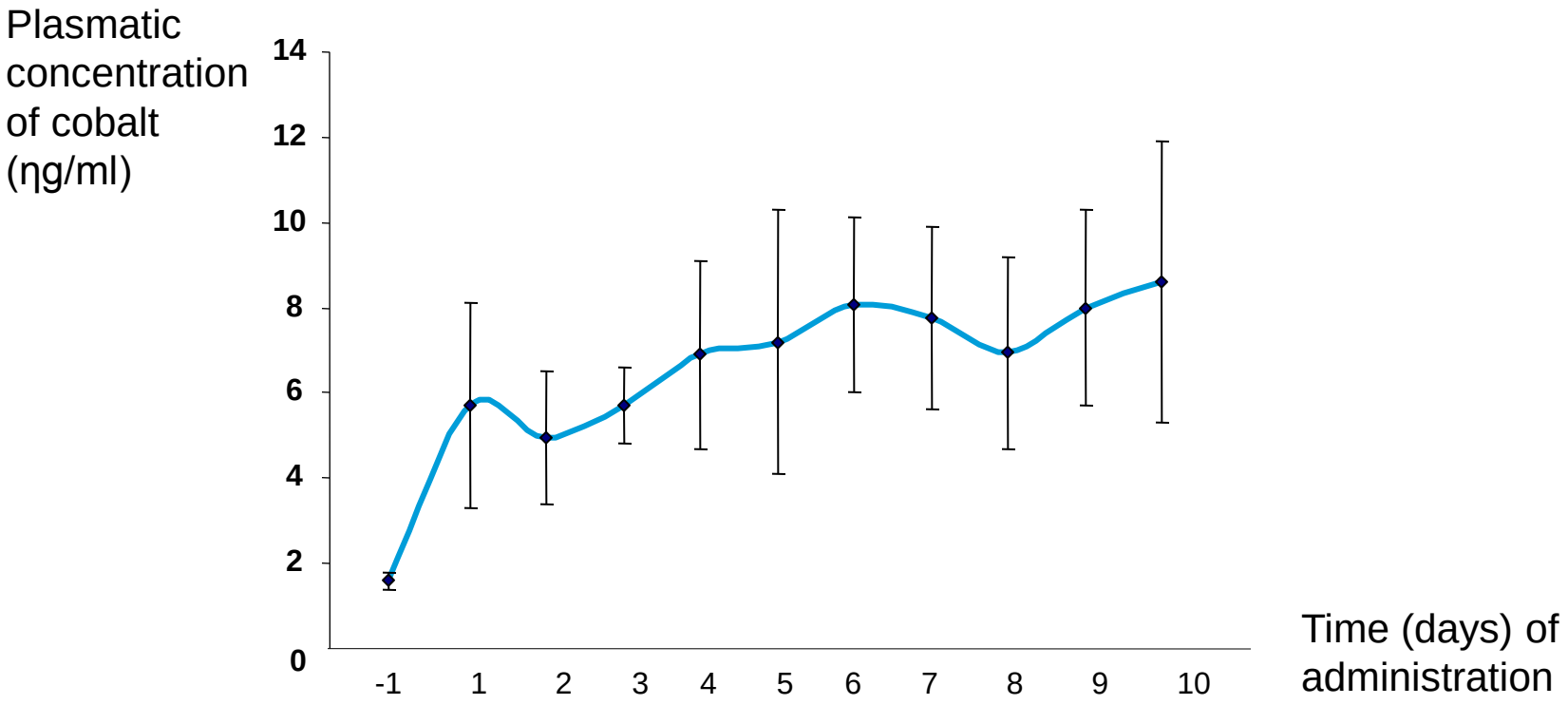


Purposes:

Effect on concentration of cobalt

2. Impact on plasmatic concentration of 11mg of cobalt during 10 days of administration

(US Threshold: 25 ηg/ml)



Conclusion:

Effet on concentration of cobalt

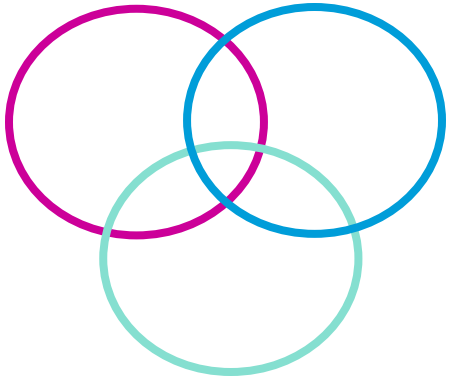
- No cumulative effect of cobalt orally absorbed in urine
- Apparently no cumulative effect in plasma

- 72h are sufficient in order to eliminate totally the cobalt in the urine

Estimation: 20 mg/day of orally absorbed cobalt is the limit beyond which there is a risk to exceed 25 ηg of cobalt per ml of plasma, for a probable duration over 72hours.

CONCLUSION

- Doping control operation is not yet effective in Europe, but will soon start
- TWYDIL is far ahead in anticipation to protect its clients
- Even with a legal daily dose of cobalt into the feed, a risk of positive case during the 10 hours following the administration is present.
- Respect dose and duration



Doping authorities must take a margin of security to protect :

betting system and income,

the image of sport,

…

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RESEARCH, QUALITY AND HORSE SENSE

Thank you for your attention