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ELECTRICALLY ASSISTED BICYCLE

What do we have to know in 2014?

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Introduction

Electrically assisted bicycles (EAB) are an emerging transportation modality, increasingly used in Switzerland (about 50 000 in 2013 [1]) and in the world [2] with different interesting characteristics.

The present poster briefly represents the positives and the negatives caracteristics of the EAB, using the latest pieces of informations from sellers and from scientific litterature.

ECOLOGICAL

- ✧ No CO_2 emission
- ✧ Poor consumption of energy
- ✧ Fight against traffic jam
- ✧ Soundless

HEALTHY

- ✧ Necessity of human power to activate the electrical support
- ✧ Correspond to a moderate intensity physical activity (> 3 MET*) until a vigorous one (> 6 MET*) on hilly courses
- ✧ Correspond to the World Health Organization recommendations concerning physical activity [3]

CONVENIENT

- ✧ Easy adaptation of the urban or countryside road network
- ✧ Three flexible level of support (none, moderate or high)
- ✧ Two categories exist in Switzerland:
  - one with a maximal power and speed respectively at 0.5 kW and 25 km/h
  - one at respectively 1 kW and 45 km/h (depending on hills and fitness of the rider [4])

* Metabolic equivalent task – 1 MET = 3.5 ml O_2.Kg^{-1}.min^{-1}

INNOVATIVE

- ✧ A multitude of brands and models exists (mountain bike, city style, folding bike, etc.)
- ✧Some of them are equiped with
  - GPS
  - Bluetooth connexion
- ✧ Some of them can be localised and bloqued by a smartphone

LIMITED AUTONOMY

- ✧ Duration of use depends on the type of EAB and the time of use of electric support. It is generally between 20 and 70 km [4]
- ✧ Duration of charging depend of the type of EAB. It takes about 4 hours, and the cost is about 5 CHF per year [4]

EXPENSIVE

- ✧ Cost from 1000 CHF to more than 5000 CHF. Prices decrease each year

DANGEROUS?

- ✧ Recent studies indicate an increased risk of accident and mortality in comparison with traditional bicycles [2]
- ✧ A period of adaptation with a responsible use is necessary

Conclusion

EAB is an interesting transport modality, ecological, convenient, innovative, with a real physical activity beneficial for health. Sales are constantly increasing in Switzerland and in the world, with many different types and brands on the market. However, the purchase price is higher and it is potentially more dangerous than classical bicycles.

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