

Surprising Facts about Bicycle Safety

Frank Krygowski
MS, PE, LCI #315

1

Frank Krygowski

- Former President, Vice President, Trustee, NEOC chairman, Ride Captain, and current Safety Chairman, Youngstown's Out-Spokin' Wheelmen bicycle club
- Current board member, Ohio Bicycle Federation
- Nationally certified Effective Cycling Instructor & League Cycling Instructor #315
- Registered PE, Ohio & Pennsylvania
- Professor Emeritus and former Coordinator, Mechanical Engineering Technology, YSU

2

OH NO! A POP QUIZ!

On the scary stuff!

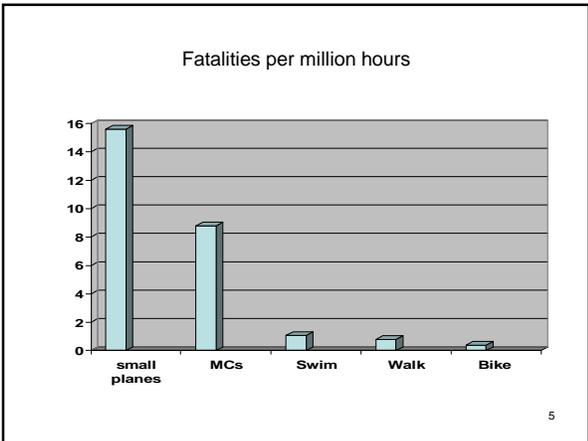
3

Fatalities!

- Rank these activities from MOST dangerous (#1) to LEAST dangerous (#5), in number of fatalities per million hours of activity.

a) bicycling _____
 b) swimming _____
 c) motorcycling _____
 d) flying, small planes _____
 e) walking near traffic _____

4



Emergency rooms!

Rank these activities from MOST dangerous (#1) to LEAST dangerous (#5), in hospital ER visits per year in the USA.

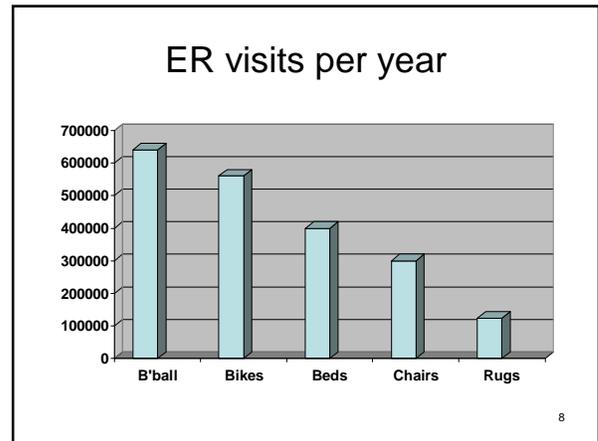
a) bicycling _____
 b) basketball _____
 c) beds _____
 d) carpets & rugs _____
 e) chairs & sofas _____

6

ER visits per year

- #1: Basketball 640,000
- #2: Bicycling 560,000
- #3: Beds 400,000
- #4: Chairs & Sofas 300,000
- #5: Carpets & Rugs 124,000

7



Head injuries!

What percentage of US head injury fatalities are cyclists?

- a) 30%
- b) 20%
- c) 10%
- d) 5%
- e) less than 1%

9

- 60,000 to 115,000 head injury fatalities per year in the USA
- Typically 750 bicycle fatalities per year in the USA from *all* causes
- Are 75% due *only* to head injury? If so, that's 562 ... about 1%, probably less!

10

On average, how often do dedicated cyclists (*i.e.* bike club members) have a fairly significant crash? (\$50 or medical attention)

- Roughly every:
- a) 1500 miles?
- b) 5000 miles?
- c) 10000 miles?
- d) 30000 miles?
- e) 50000 miles?

11

Not many crashes!

- League of American Bicyclists members average about 32,000 miles (or 11 years) between significant crashes

12

ER injuries?

For a cyclist being treated in an ER, rank the most common injury being treated #1, least common injury #5:

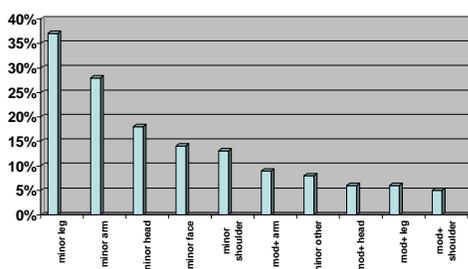
- a) minor leg injuries _____
- b) minor arm injuries _____
- c) minor shoulder injuries _____
- d) non-minor arm injuries _____
- e) non-minor head injuries _____

13

- #1: minor leg = 37%;
- #2: minor arm = 28%;
- #3: minor head = 18% (bruises, scratches);
- #4: minor face = 14%;
- #5: minor shoulder=13%;
- #6: moderate+ arm = 9%;
- #7: minor "other" = 8%;
- #8: moderate+ head = 6%;
- #9: moderate+ leg = 6%;
- #10: moderate+ shoulder = 5%

14

Cyclists' ER treatments



15

Motoring vs. Cycling

- In these countries, using fatalities per million hours:
Is cycling *safer*, or *more dangerous*, or *about the same*, as riding in a car?

- France?
- Germany?
- Sweden?
- Switzerland?
- Australia?
- Netherlands?
- USA?
- Britain?

16

- **France: cycling is safer than driving, per hour**
- **Germany: cycling is about equal in safety.**
- **Sweden: cycling is about equal in safety.**
- **Switzerland: cycling is about equal in safety.**
- **Australia: cycling is about equal in safety.**
- **Netherlands: cycling is about equal in safety.**
- **USA: ?? Some say cycling is safer, others say more dangerous.**
- **Britain: cycling is more dangerous**

17

Dedicated British Cyclists:

How many person-years of CTC riding between fatalities? *i.e.*, how long would the average CTC member have to ride to get up to a 50% chance of dying on the bike?

- a) 100 person-years of CTC cycling per fatality?
- b) 500 person-years of CTC cycling per fatality?
- c) 1500 person-years of CTC cycling per fatality?
- d) 15000 person-years of CTC cycling per fatality?

18

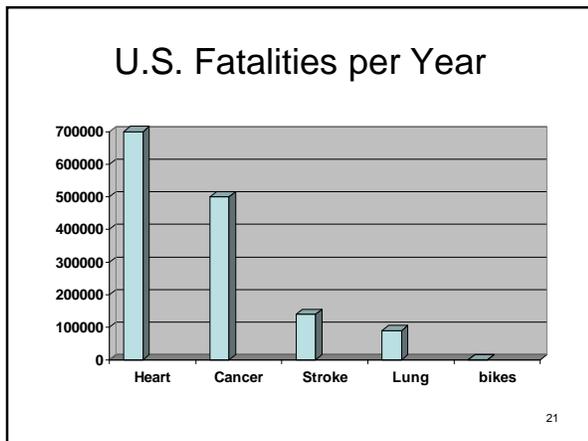
British Cyclist's Touring Club:
 60,000 members, 3 - 5 fatalities per year
= 15,000 person-years of cycling per fatality

19

Of the top four causes of US deaths, how many does cycling reduce or help prevent?

- One?
- Two?
- Three?
- All four?

20



For all of society: How does cycling do for
 Years of life GAINED
 vs.
 Years of life LOST?

- A) 10 to 1 against biking?
- B) About equal?
- C) 10 to 1 in favor of biking?
- D) 20 to 1 in favor of biking?

22

20 to 1 in favor of biking!

**Bicycling saves society
 20 years of life**
 (through improved health, lower pollution,
 fewer traffic fatalities, etc.)
**for every year of life lost
 to bicycling crashes!**

23

On Average:

How many miles do cyclists ride between fatalities?

- a) 15,000 miles?
- b) 150,000 miles?
- c) 1.5 million miles?
- d) 15 million miles?
- e) 150 million miles?

24

Data for the USA, Australia, & Britain show:

Cyclists average
5 million miles to
15 million miles
between fatalities!

25

Bike Safety:

We Already Have It!

**Bicycling is *NOT*
very dangerous!**

26

**It does us
no good to
pretend
cycling is
dangerous!**

27

Detriments of the “danger” myth:

- Lack of legal support for cyclists
- Terrible facility design
- Discriminatory laws
- Reduced cycling

28

Detriments of reduced cycling:

- **Reduced support for cycling and cyclists**
- **Reduced safety of cyclists**
- **Increased environmental problems**
- **Increased health costs**

29

**It does us
no good to
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30

Want even more safety?

Simple Falls:

50% of the problem

31

To Prevent Falls:
Watch Where you're Going!

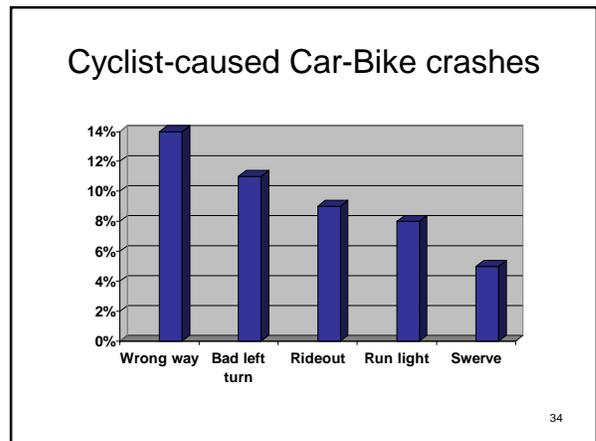
- **Watch for Potholes**
- **Watch for Slippery spots**
 Gravel, wet leaves, wet steel, ice
- **Watch for "slots"**
 Drain grates, railroad rails, buggy ruts, edge of the road

32

Car-Bike collisions:

- **17% of the incidents**
- **But over 90% of the (few) fatalities**

33

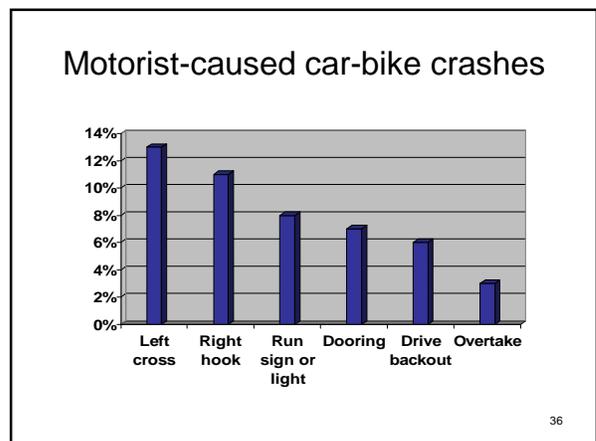


To Prevent Car-bike Crashes:

- **Rule #1: Operate your bike according to the rules of the road!**

(If you wouldn't do something driving your car, don't do it on your bike!)

35



Ride far enough right
to be courteous –

**But first, ride far enough
LEFT to be safe!**

37

Bike-bike collisions:

- 17% of the problem!

38

To improve your odds?

- Ride Straight
- Ride Steady
- Communicate
- Be predictable

39

Your odds are already very good!

- Cycling is NOT a
“hazardous activity”!
- It does us no good
to pretend it is!

40