Do some more examples too later on.

All right, there's somebody whose genotype we know absolutely for sure without even knowing who her parents are, who his or her parents are who they're related to, or anything.

What's 1 genotype up there that you know for absolutely sure, yeah.

Yeah, go ahead.

Who is little d little d?

Helen has got to be a little d little d

Alright, so number one thing you know, Helen must be little d little d.

Why is that?

Because that's the only way you can be diseased.

All right, so she's got to be little d little d right

#2.

Given that Helen, is little d little d, what do we know about her parents?

Yeah, and the black shirt, yeah.

So both of their parents are big D little d

Was actually from the very first stop.

We know for sure that both of her parents are actually let's.

So both let me.

You can do in two pieces, both parents must be big D little d.

Why do you know that they're big D?

Do you know they have a big D?

'cause they're normal 'cause they're not diseased.

How do you know that they've got a little d?

'cause they had to give it to their daughter, right?

OK, so so you know that these guys are big little big little right.

And then three Tom, what do we know about Tom genotype.

Right?

Nicely put, she said he's either heterozygous or homozygous dominant, right?

So that's exactly right.

He's either is Big D big D or big D little d.

We sometimes write that big D blank.

Because that Blank says, “I don't know. What it is it could be either, but it doesn't actually matter because he's a, he's unaffected.”

That's so we know he's got a big D.

Questions about that analysis, before we do some more stuff.

OK.

All right, what I want to do now is think a little bit about features of autosomal recessive - that is AR - diseases.

OK.

They are as one of your colleagues suggested they are usually rare.

Why is that?

Because the little d alleles the disease alleles are rare.

And you have to find a person has two of them.

Basically have two parents that have happened to carry happen to have kids together.

So the the autosomal recessive diseases tend to be relatively rare in the human population, right?

It also it has carriers.

That is, for example Fred and Karen.

Right there they have a little d but aren't diseased.

OK.

I want what I want.

To do now is have you guys talk to your neighbors about the next one.

So I'm going to make a sentence we'll do like a a genetic Madlib, so I'll leave a blank and you have to figure out the word that goes in the blank and I'll call on people, for that

All right?

So unaffected parents Blank affected children.

All right, so the idea.

Is what goes in there always, never, sometimes, can ,can't.

There's going to be a phrase, unaffected parents never have affected children, affected parents always have affected children, etc.

So talk to your neighbor.

What word or words goes in that blank, and then I'll.

Pick a name.