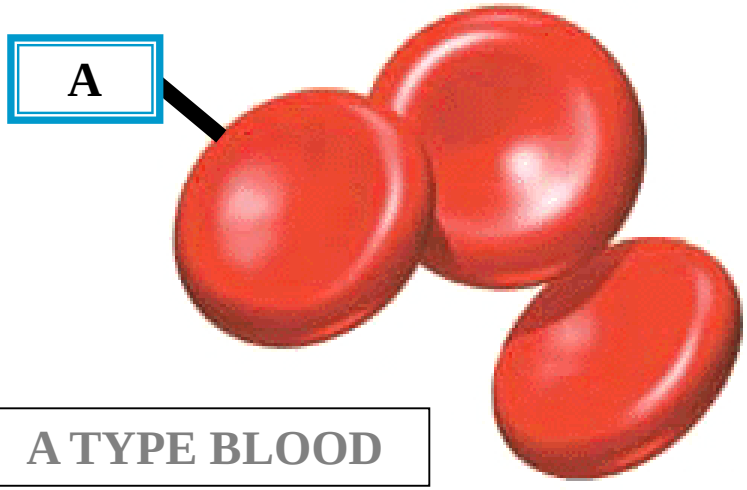
QUESTION

WHAT ARE THE DIFFERENT HUMAN BLOOD TYPES?

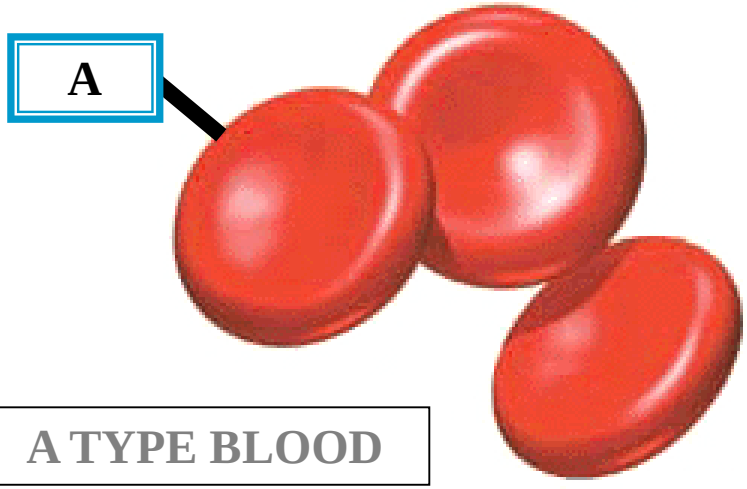
QUESTION

HUMAN BLOOD TYPES



A TYPE BLOOD

HUMAN BLOOD TYPES



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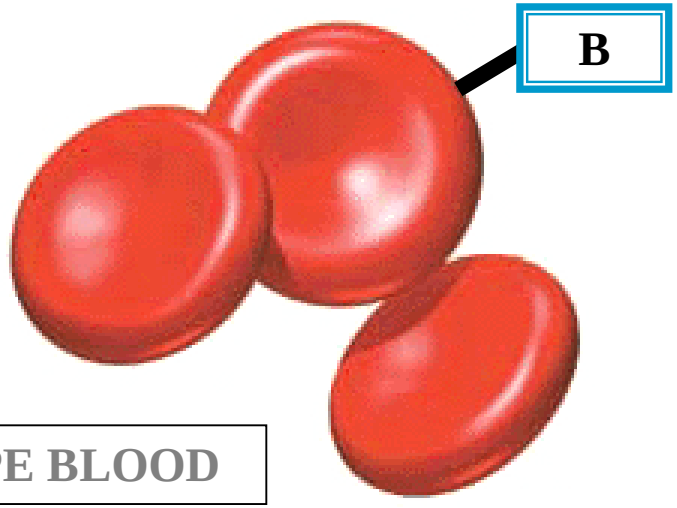
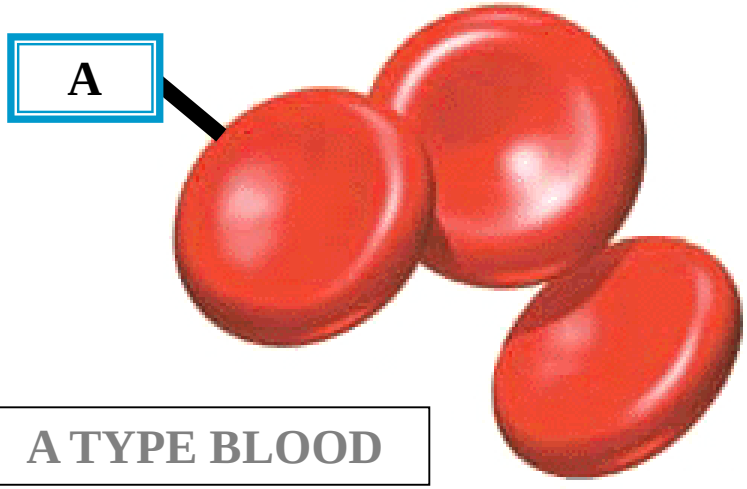
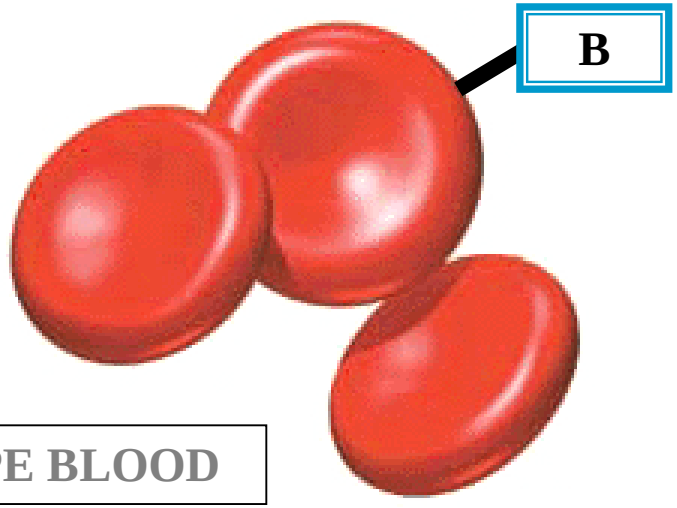


B TYPE BLOOD

HUMAN BLOOD TYPES



A TYPE BLOOD



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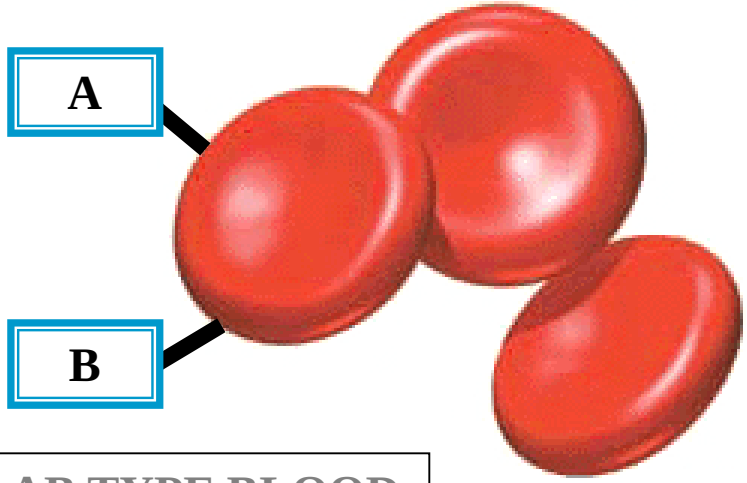

AB TYPE BLOOD

HUMAN BLOOD TYPES

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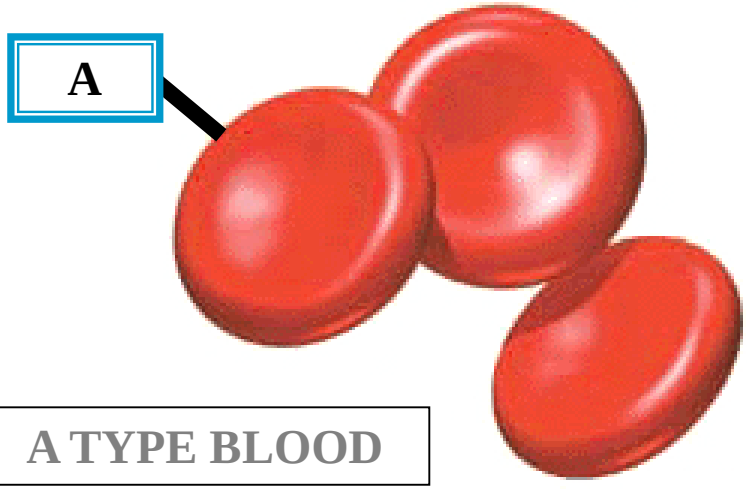

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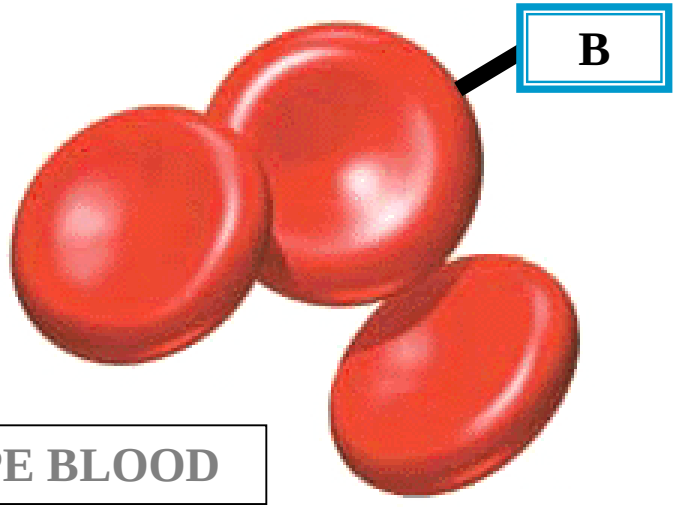

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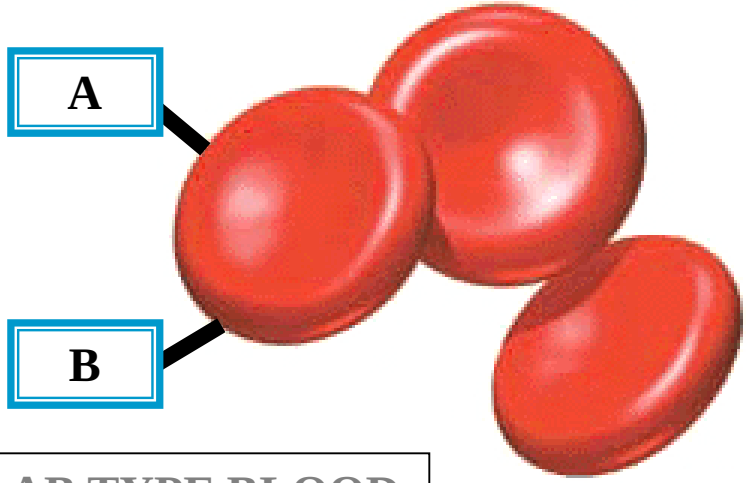
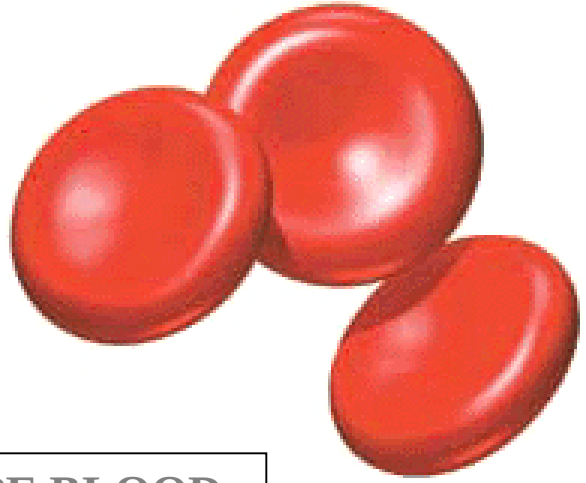
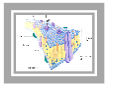


AB TYPE BLOOD



O TYPE BLOOD



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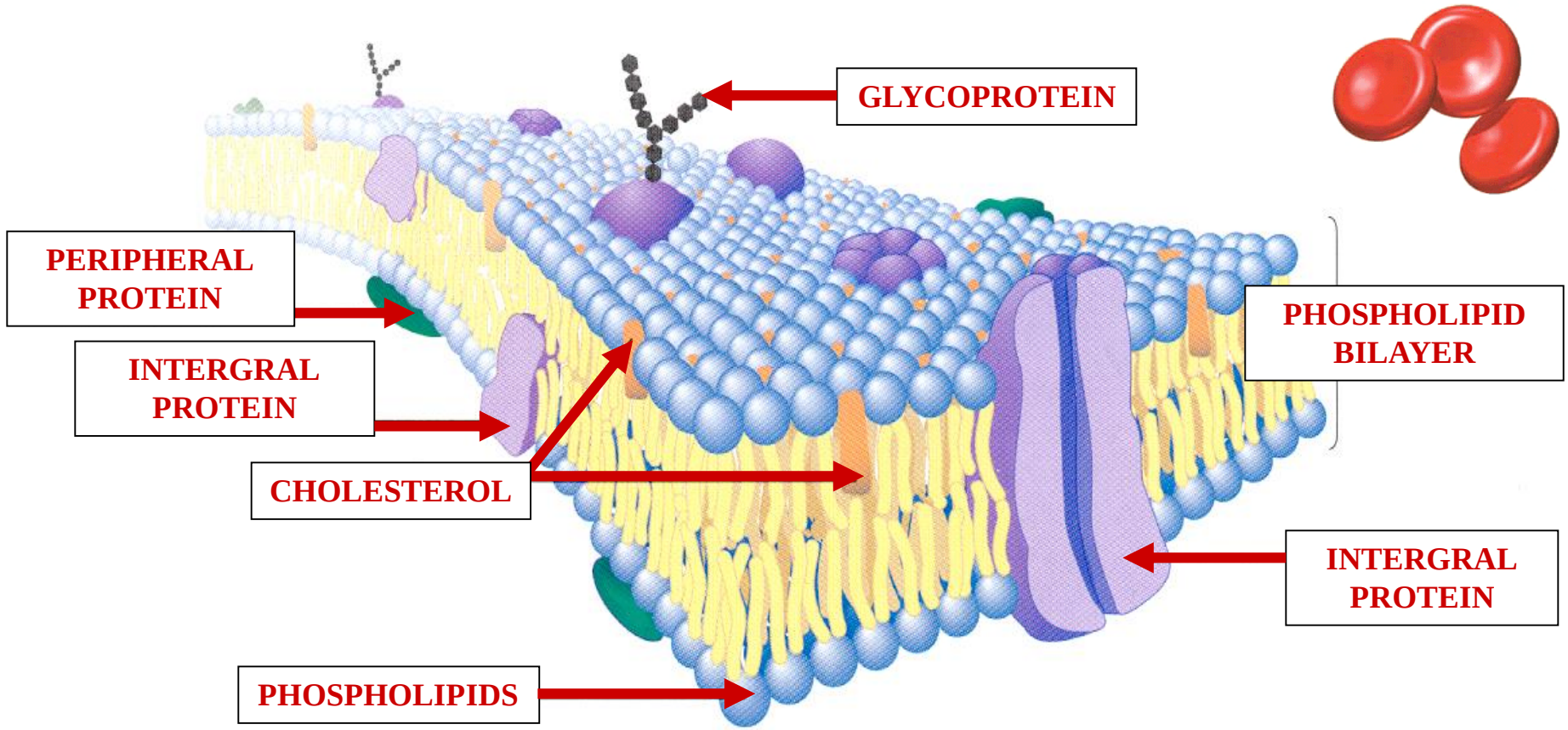
QUESTION

WHAT IS THE ACCEPTED MODEL FOR BIOLOGICAL MEMBRANE STRUCTURE?

QUESTION

F

MEMBRANE STRUCTURE



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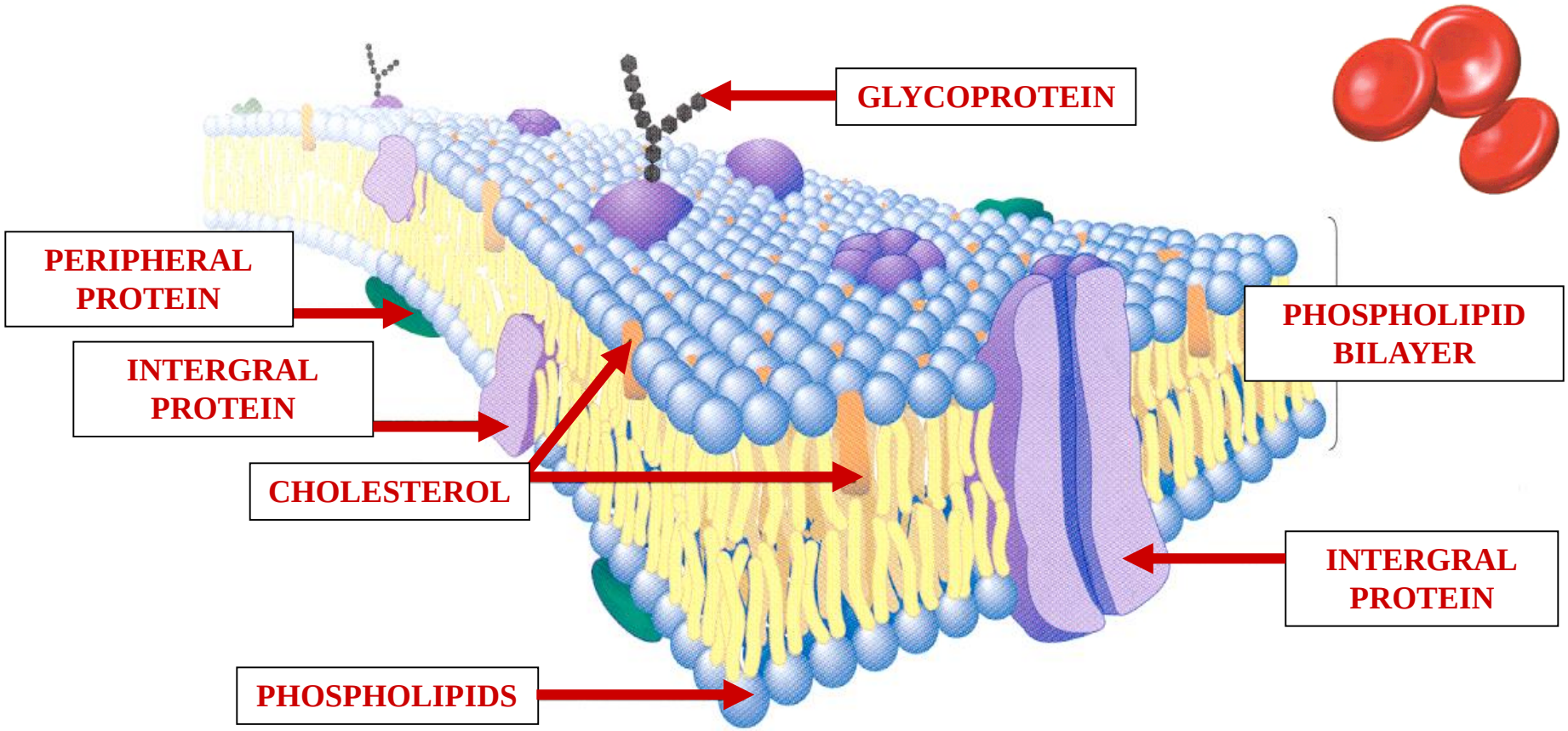
MEMBRANE STRUCTURE



FLUID MOSAIC MODEL

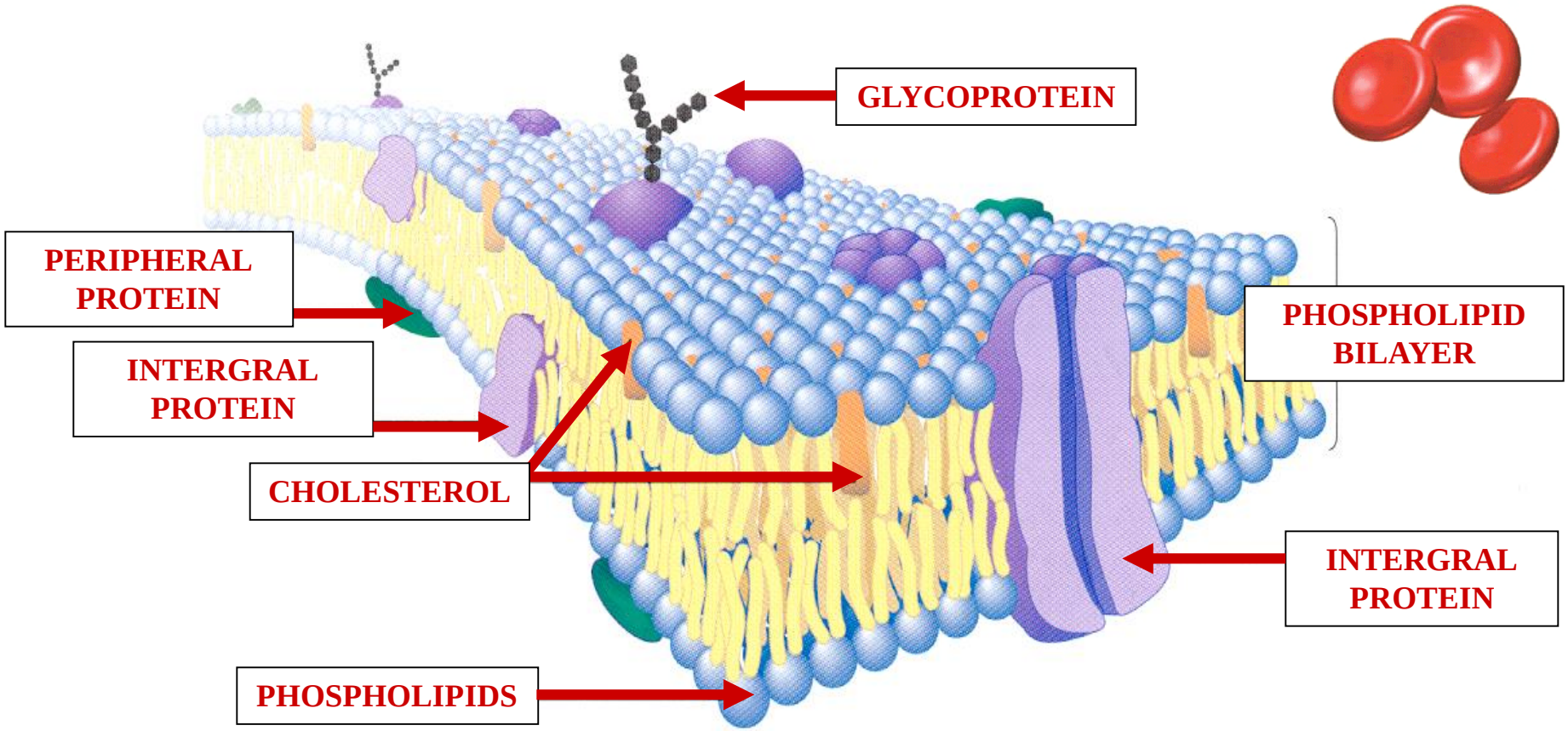
QUESTION

WHAT SERVES AS THE IDENTIFICATION MARKER FOR BIOLOGICAL MEMBRANES?

QUESTION

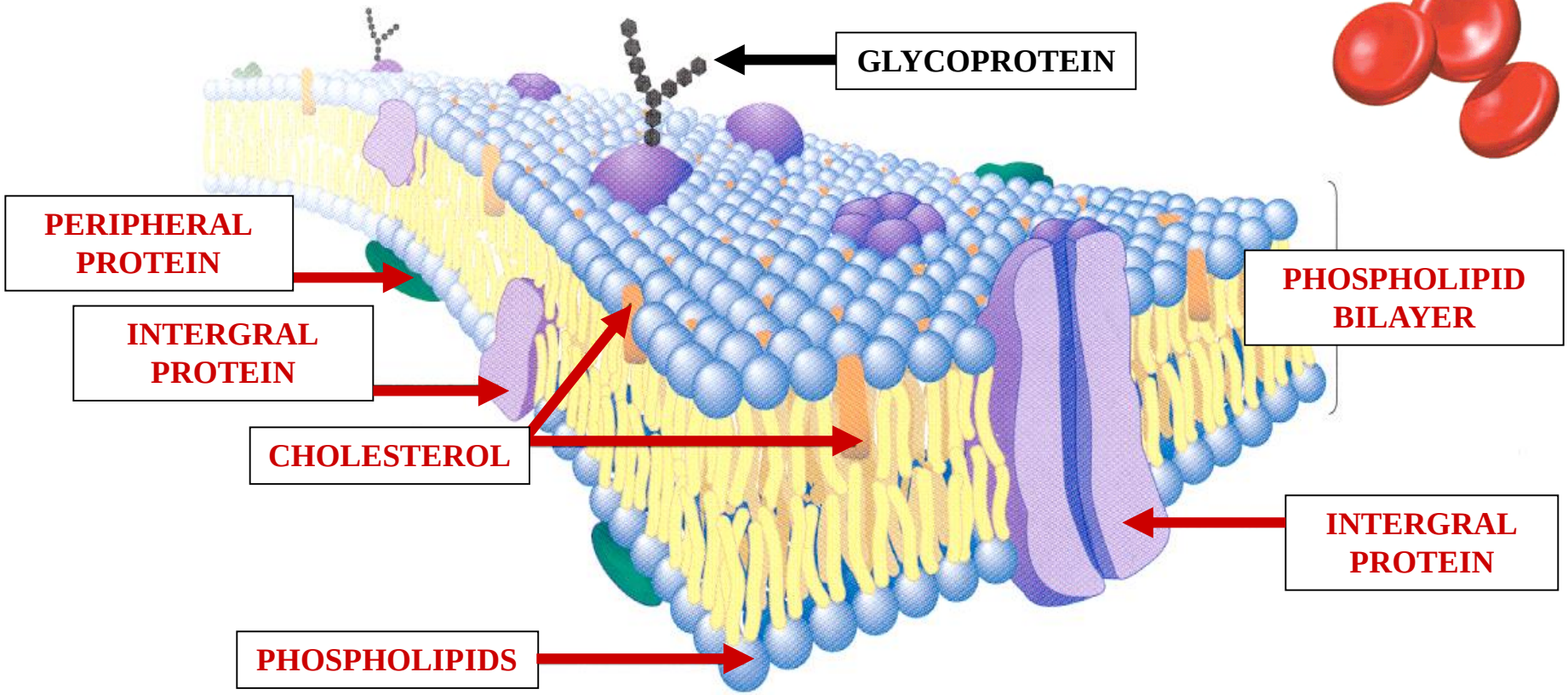
G

MEMBRANE STRUCTURE



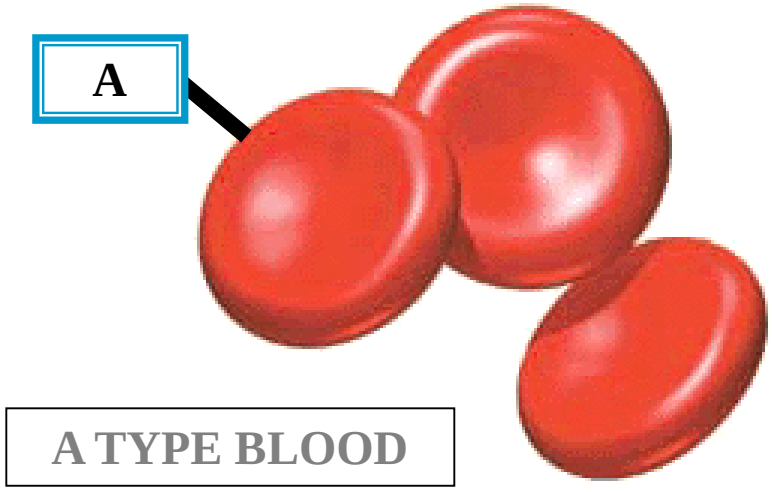
FLUID MOSAIC MODEL

MEMBRANE STRUCTURE



FLUID MOSAIC MODEL

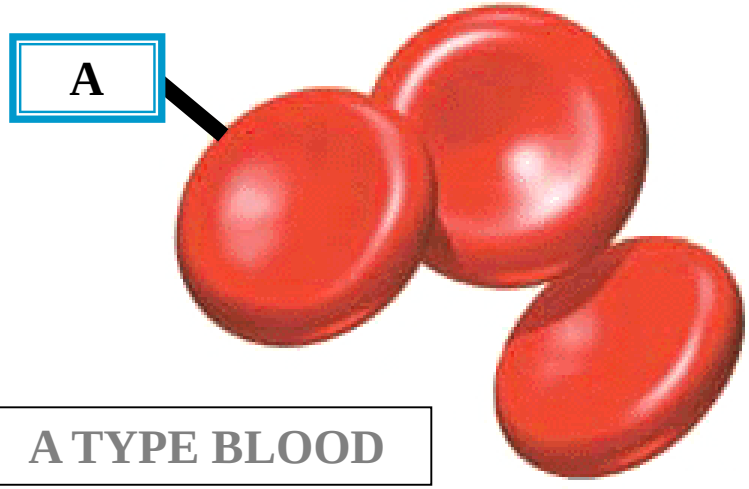
HUMAN BLOOD TYPES



A TYPE BLOOD

= GLYCOPROTEIN

HUMAN BLOOD TYPES



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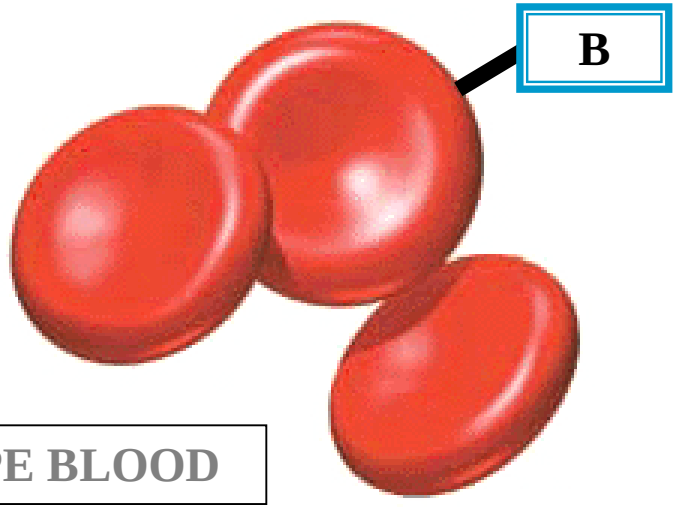
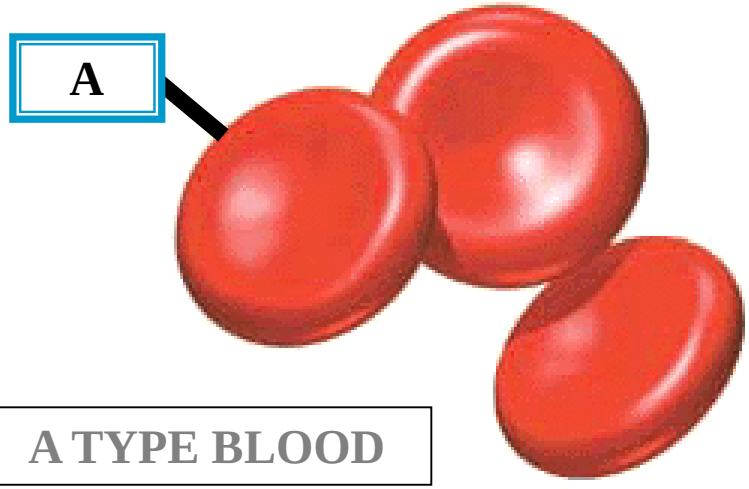


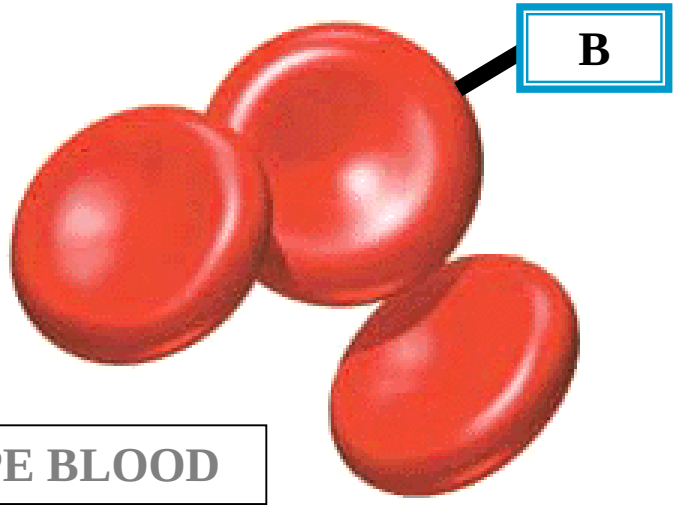
B TYPE BLOOD

= **GLYCOPROTEIN**

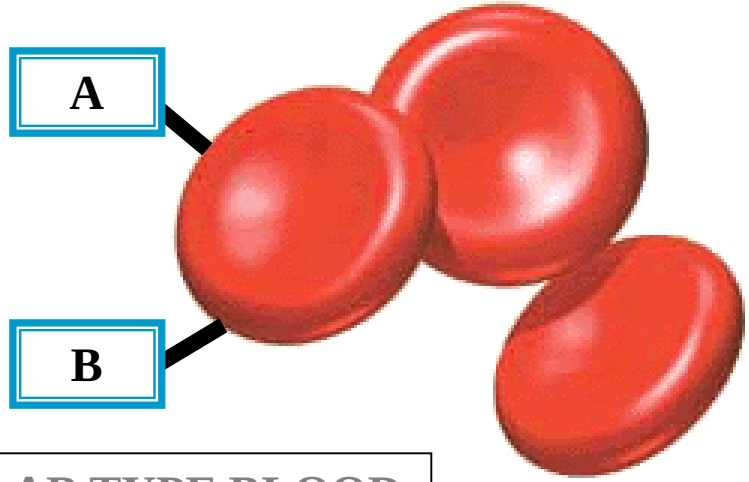
HUMAN BLOOD TYPES



A TYPE BLOOD



B TYPE BLOOD

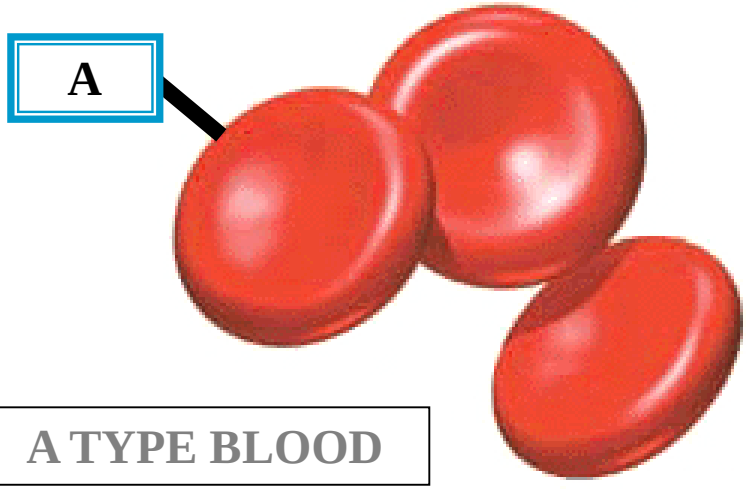


AB TYPE BLOOD

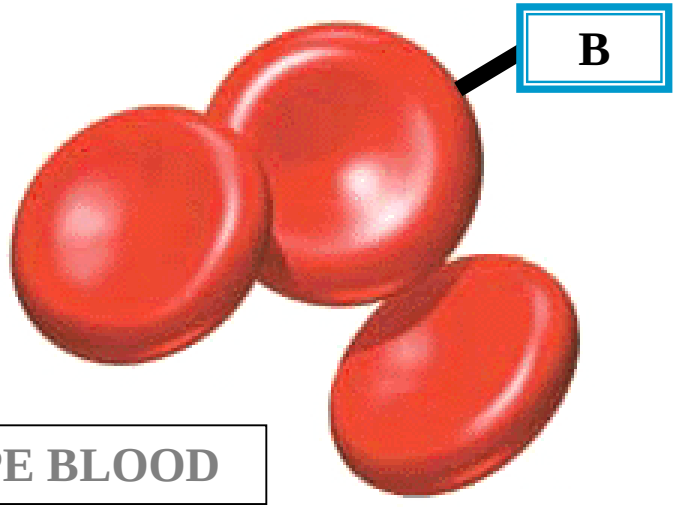
= **GLYCOPROTEIN**

HUMAN BLOOD TYPES

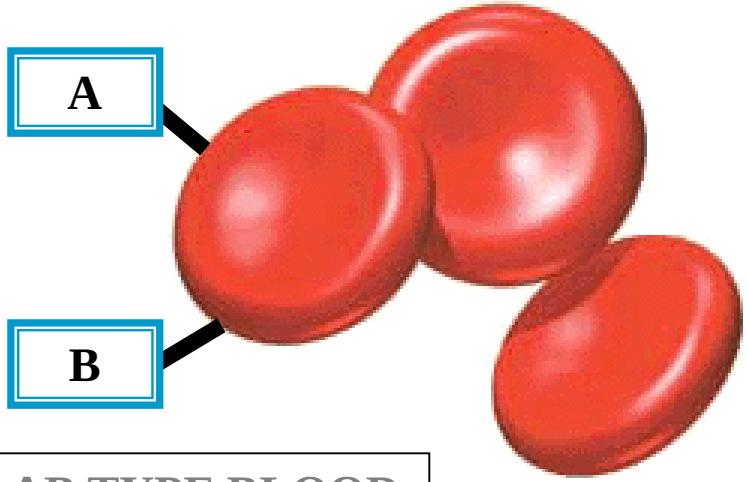
?



A TYPE BLOOD



B TYPE BLOOD



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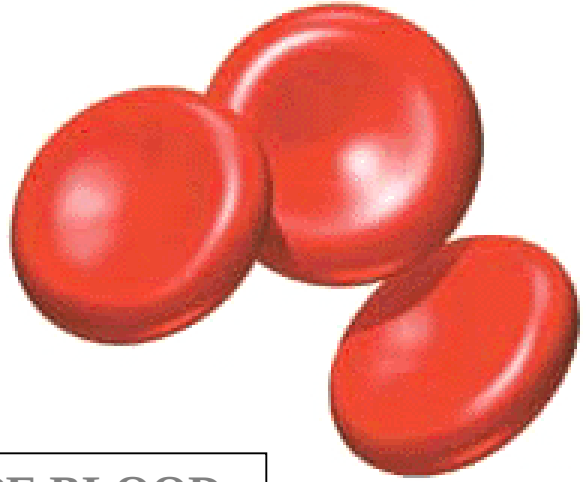


O TYPE BLOOD

A

QUESTION

WHAT DETERMINES BLOOD GLYCOPROTEINS?

QUESTION

ANSWER

BLOOD ALLELES

ANSWER

BLOOD ALLELES

BLOOD ALLELES

A

I = A GLYCOPROTEINS

BLOOD ALLELES

I^A = A GLYCOPROTEINS

I^B = B GLYCOPROTEINS

BLOOD ALLELES

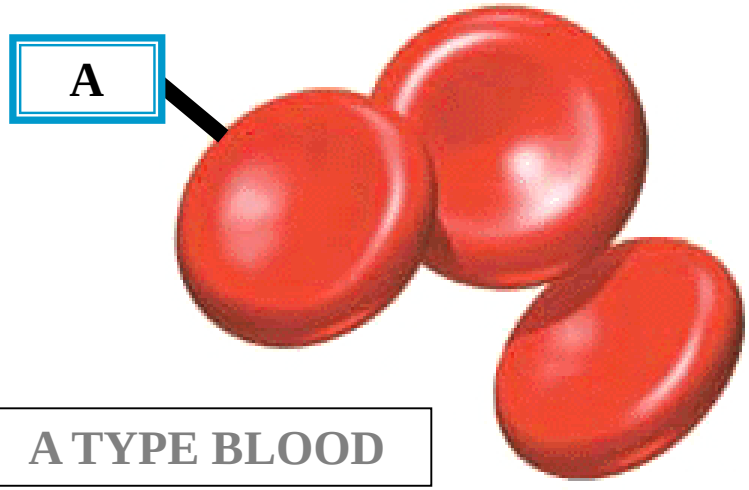
I^A = A GLYCOPROTEINS

I^B = B GLYCOPROTEINS

i = NO GLYCOPROTEINS

BLOOD PHENOTYPES

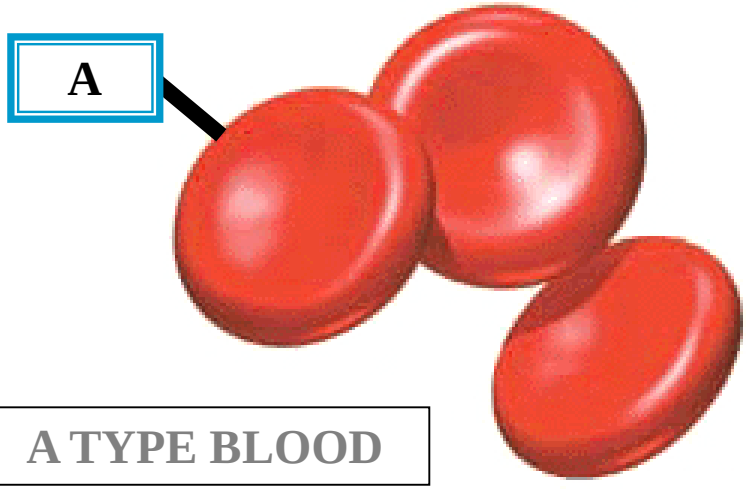
HUMAN BLOOD PHENOTYPES



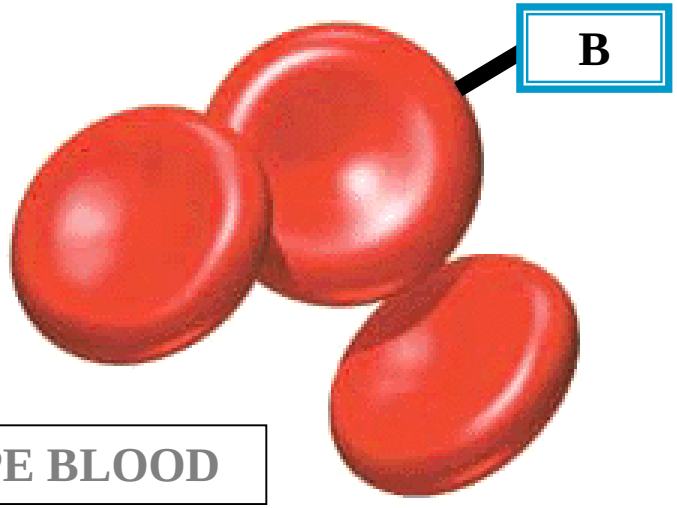
A TYPE BLOOD

= GLYCOPROTEIN

HUMAN BLOOD PHENOTYPES



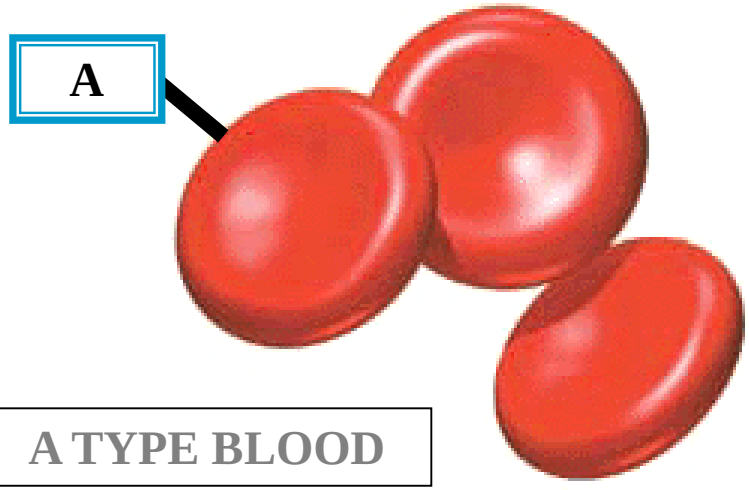
A TYPE BLOOD



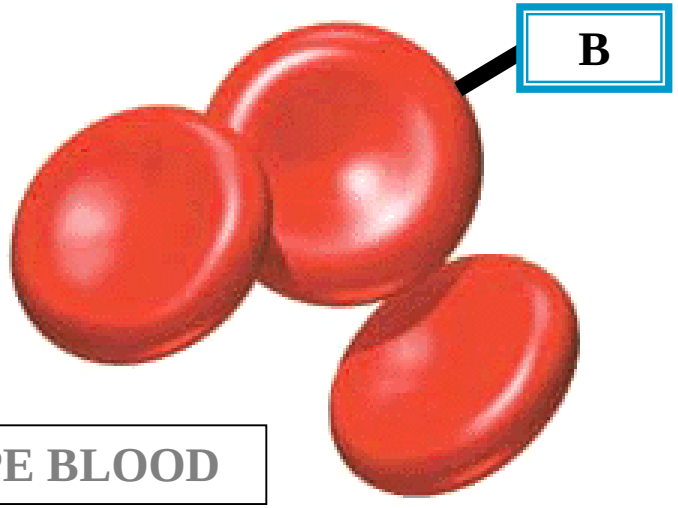
B TYPE BLOOD

= **GLYCOPROTEIN**

HUMAN BLOOD PHENOTYPES



A TYPE BLOOD



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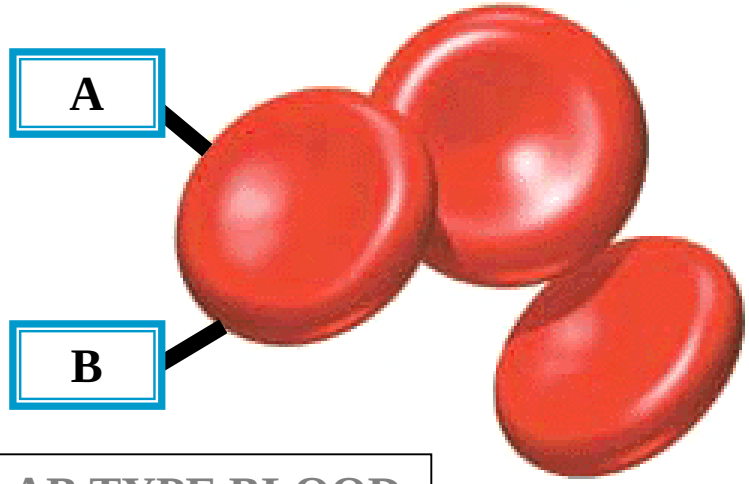
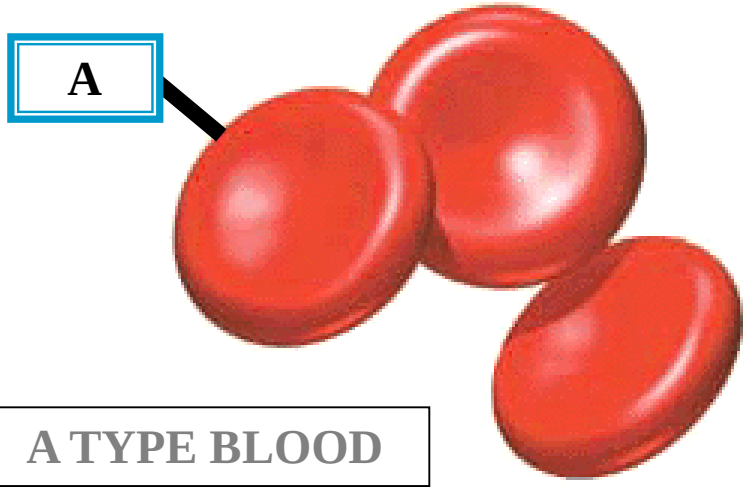


AB TYPE BLOOD

= **GLYCOPROTEIN**

HUMAN BLOOD PHENOTYPES



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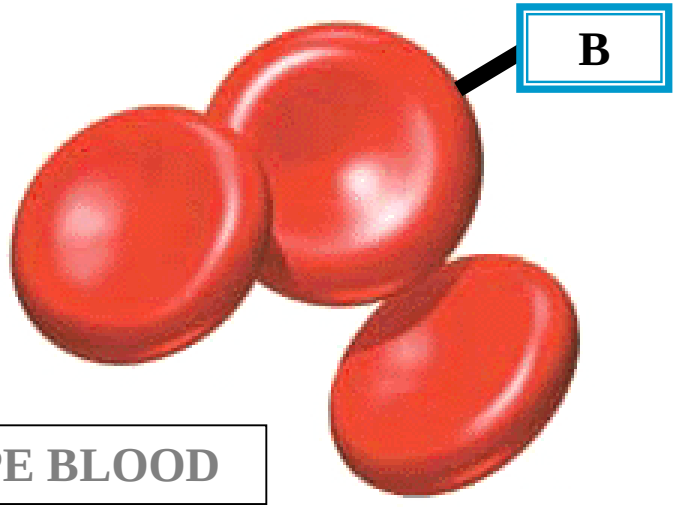

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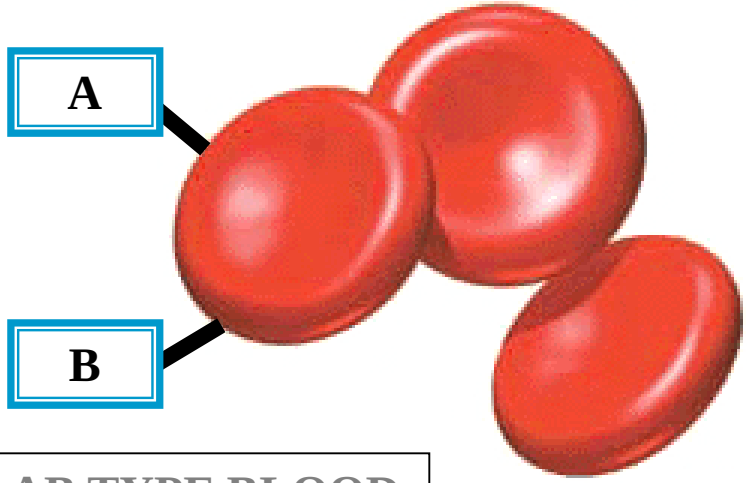

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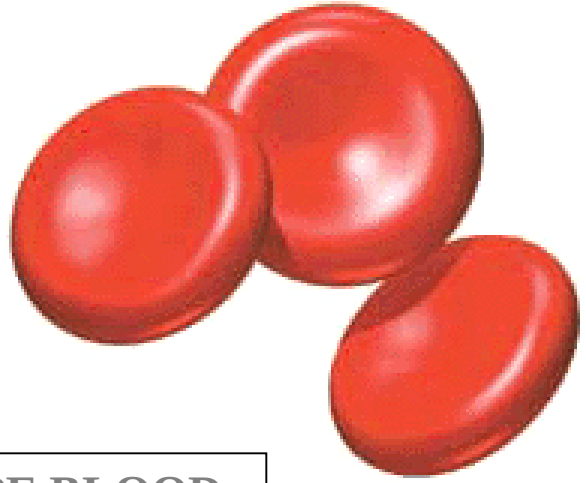


O TYPE BLOOD

BLOOD GENOTYPES

BA

+

A-TYPE BLOOD GENOTYPE

BLOOD ALLELES

A

I = A GLYCOPROTEINS

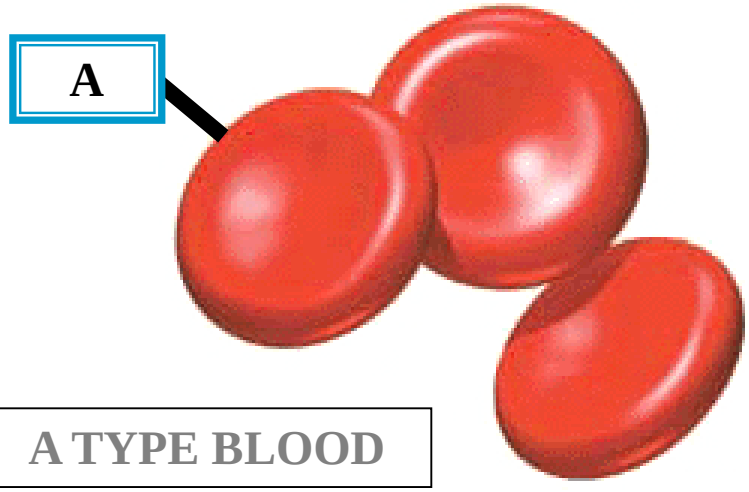
B

I = B GLYCOPROTEINS

i = NO GLYCOPROTEINS

HUMAN BLOOD GENOTYPES

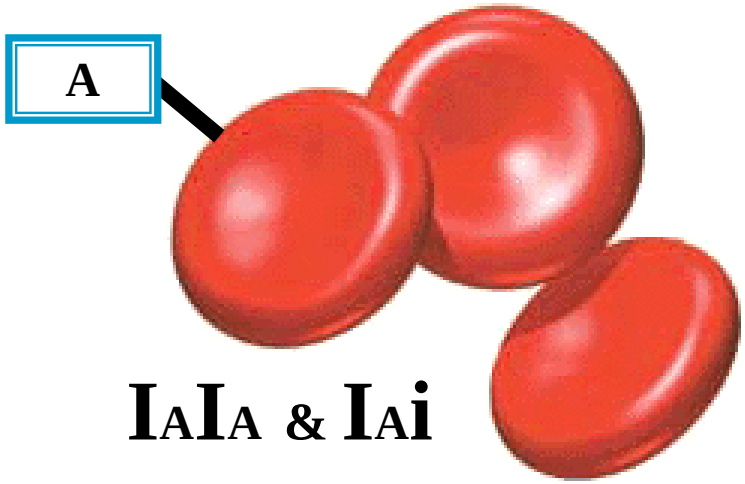
I



A TYPE BLOOD

= GLYCOPROTEIN

HUMAN BLOOD GENOTYPES



I^AI^A & I^Ai

= GLYCOPROTEIN

BA

+

B-TYPE BLOOD GENOTYPE

BLOOD ALLELES

A

I = A GLYCOPROTEINS

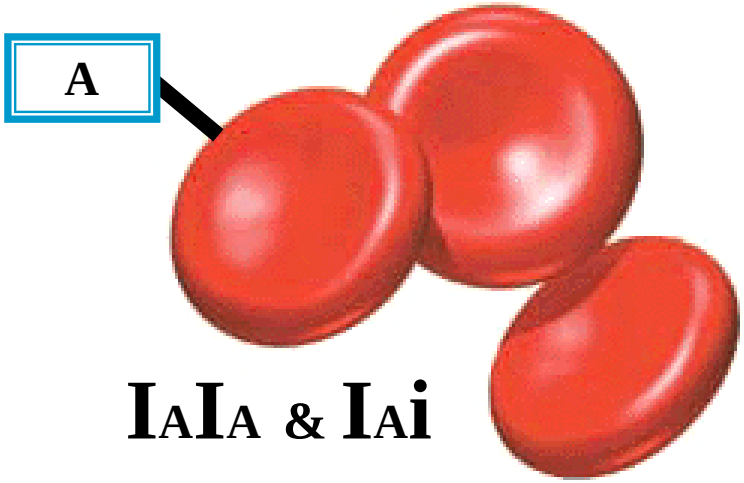
B

I = B GLYCOPROTEINS

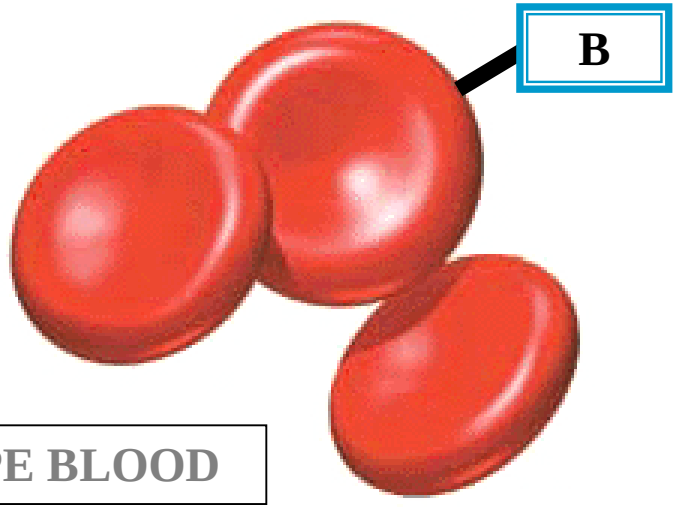
i = NO GLYCOPROTEINS

HUMAN BLOOD GENOTYPES

I



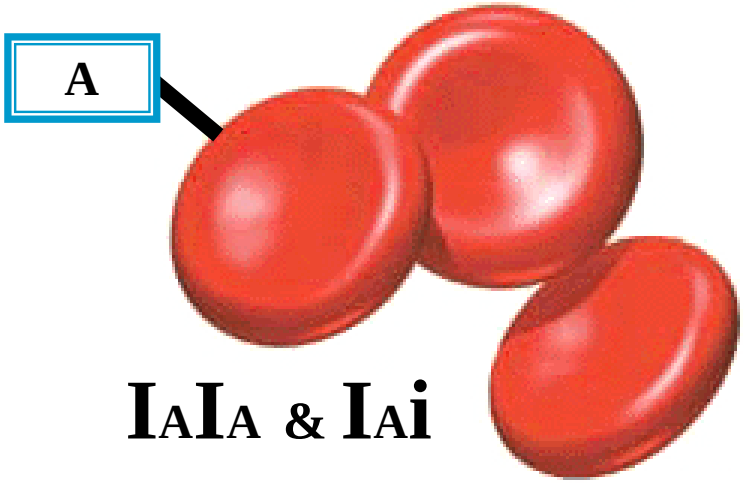
I^AI^A & I^Ai



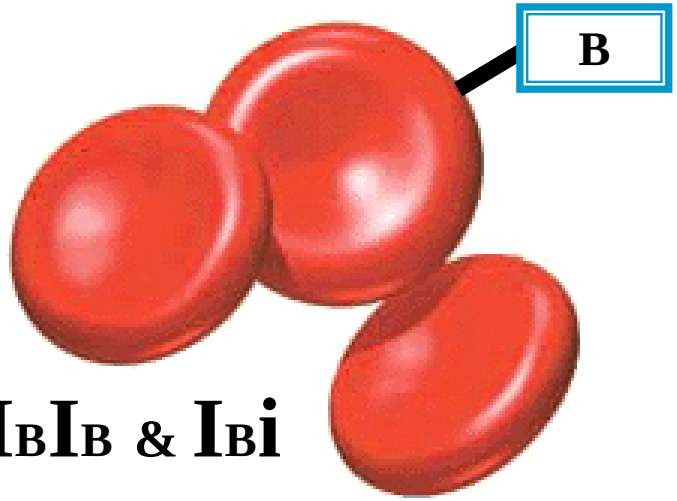
B TYPE BLOOD

= GLYCOPROTEIN

HUMAN BLOOD GENOTYPES



I^AI^A & I^Ai



I^BI^B & I^Bi

= GLYCOPROTEIN

BA

+

AB-TYPE BLOOD GENOTYPE

BLOOD ALLELES

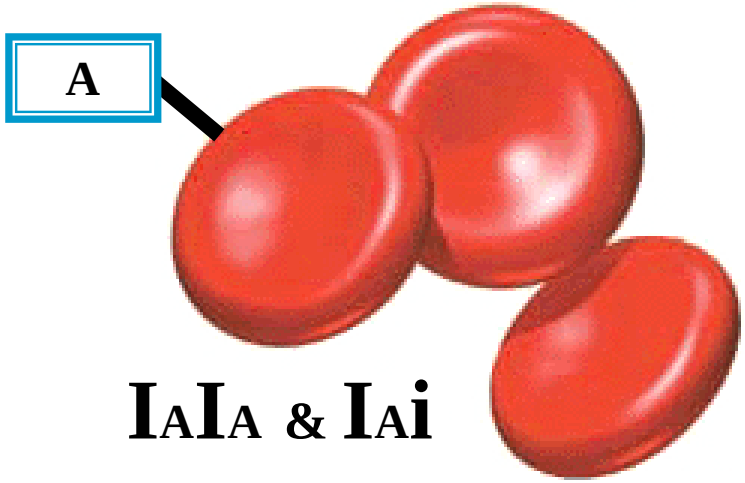
I^A = A GLYCOPROTEINS

I^B = B GLYCOPROTEINS

i = NO GLYCOPROTEINS

HUMAN BLOOD GENOTYPES

I



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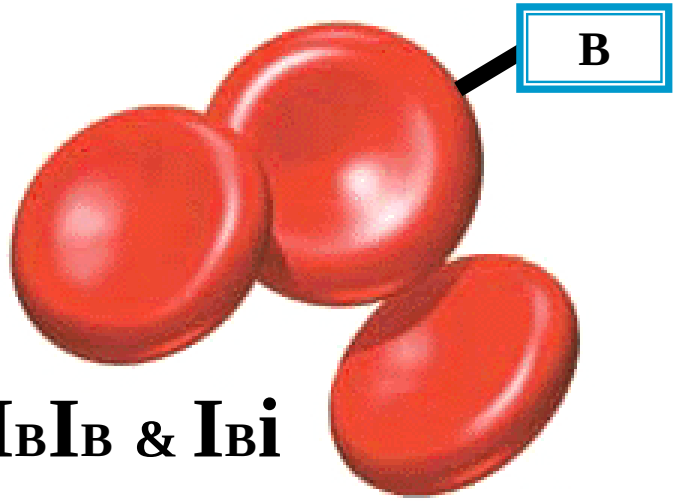
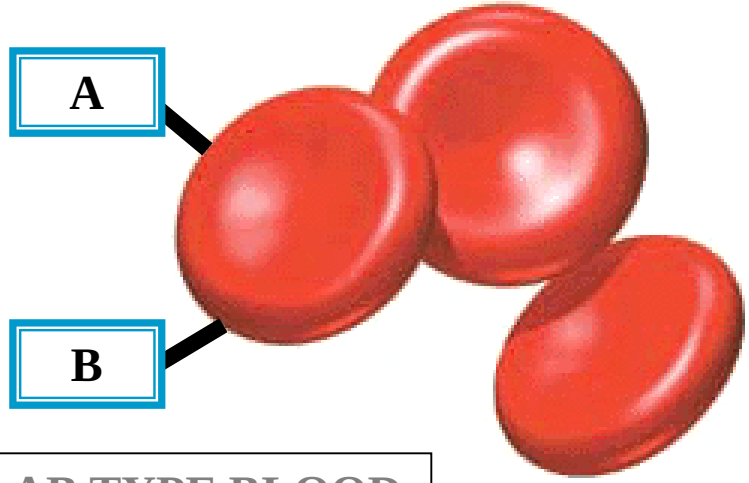


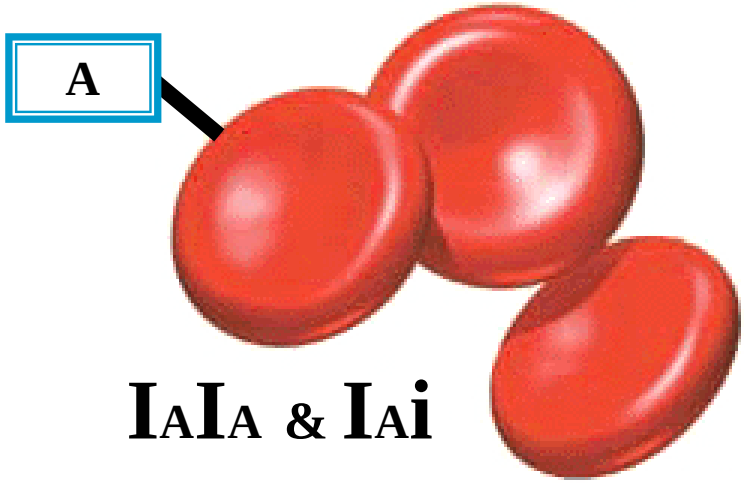
I^BI^B & I^Bi



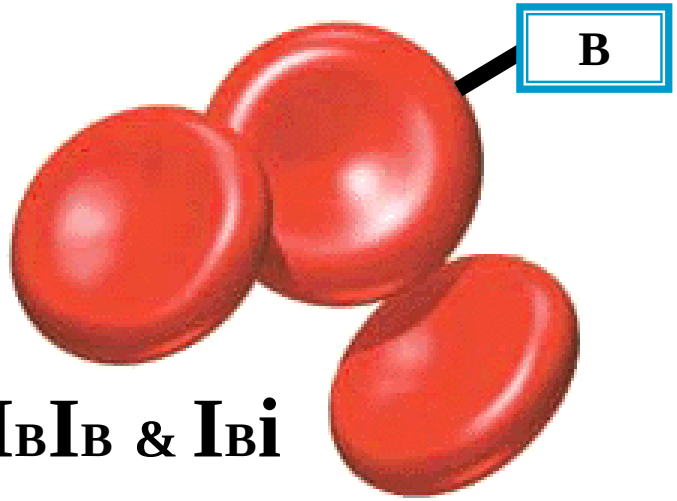
AB TYPE BLOOD

= GLYCOPROTEIN

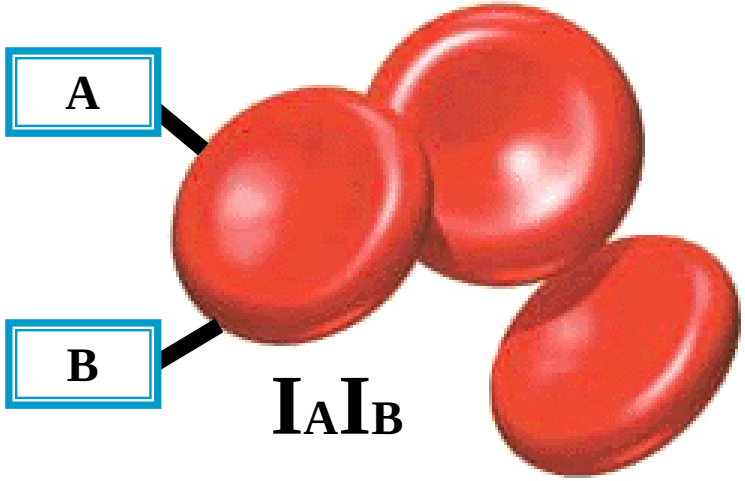
HUMAN BLOOD GENOTYPES



I^AI^A & I^Ai



I^BI^B & I^Bi



I^AI^B

= GLYCOPROTEIN

BA

+

O-TYPE BLOOD GENOTYPE

BLOOD ALLELES

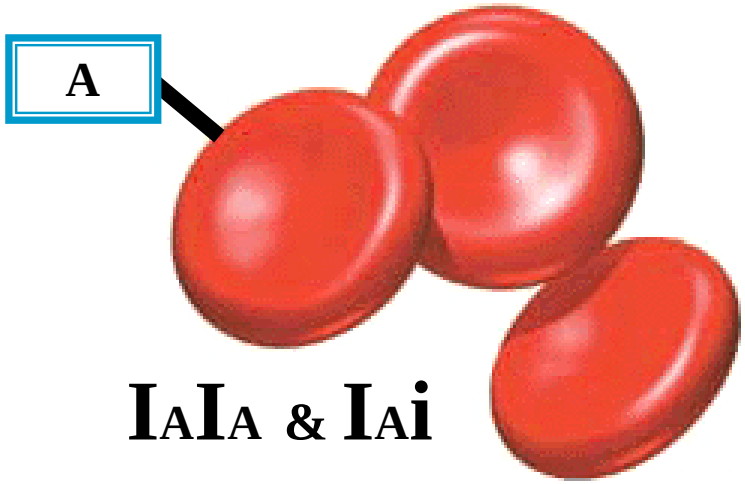
I^A = A GLYCOPROTEINS

I^B = B GLYCOPROTEINS

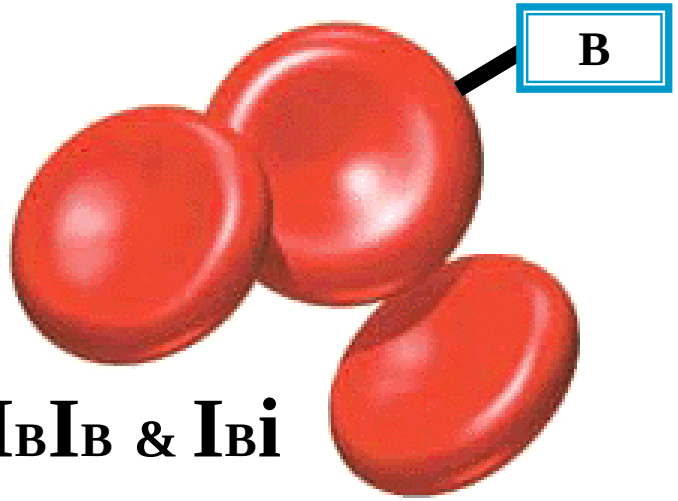
i = NO GLYCOPROTEINS

HUMAN BLOOD GENOTYPES

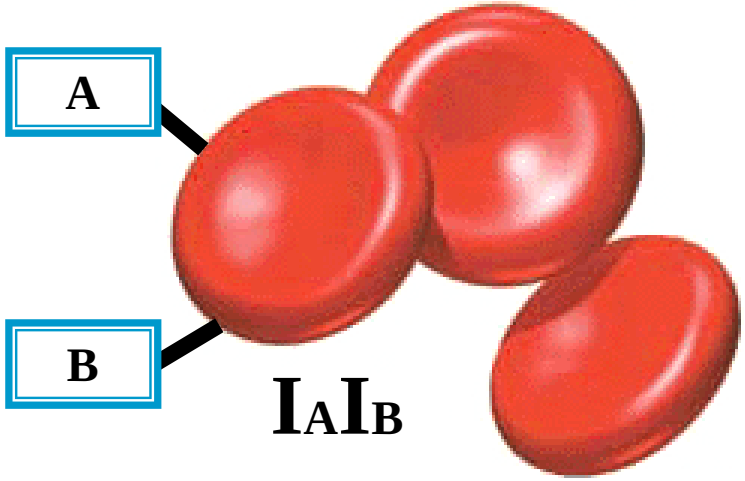
i



I^AI^A & I^Ai



I^BI^B & I^Bi



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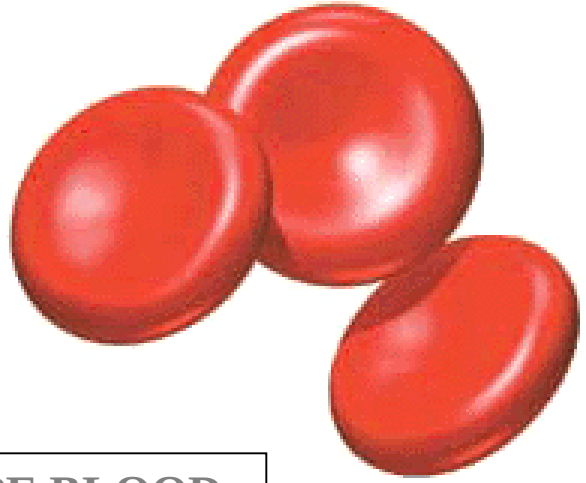

O TYPE BLOOD

HUMAN BLOOD GENOTYPES

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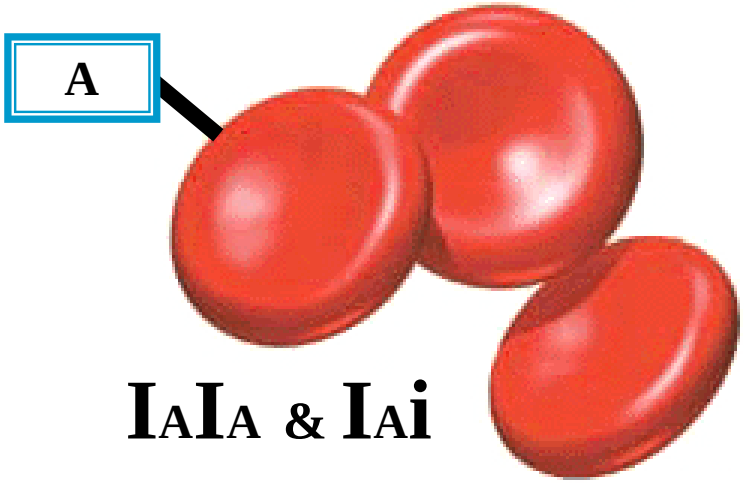
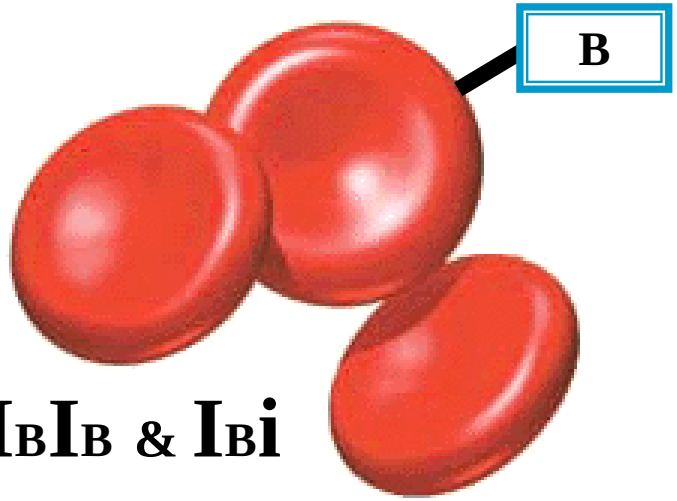
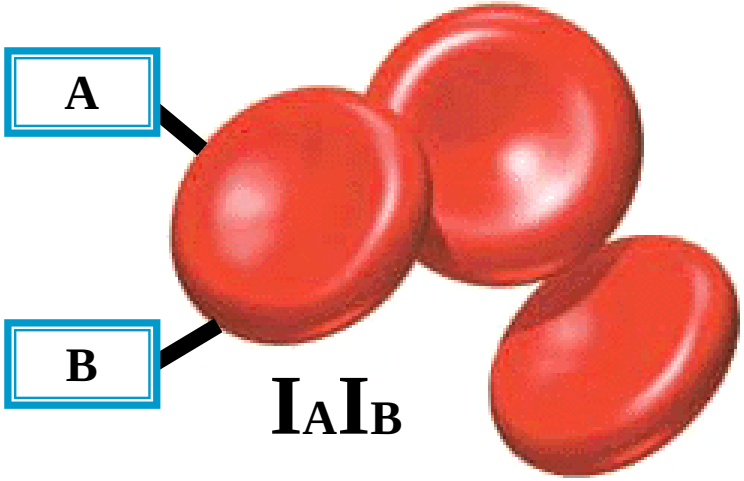


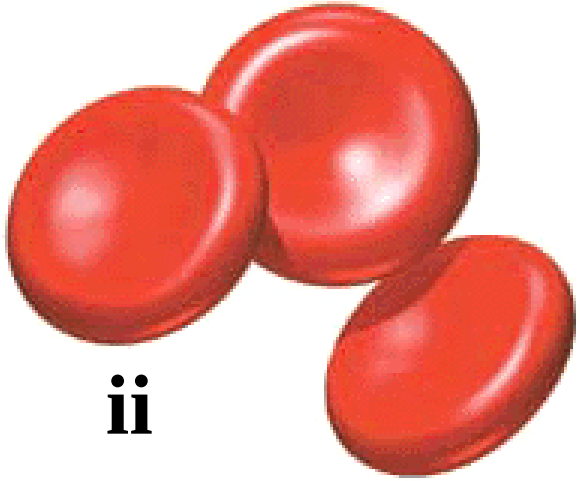
I^AI^A & I^Ai



I^BI^B & I^Bi



I^AI^B



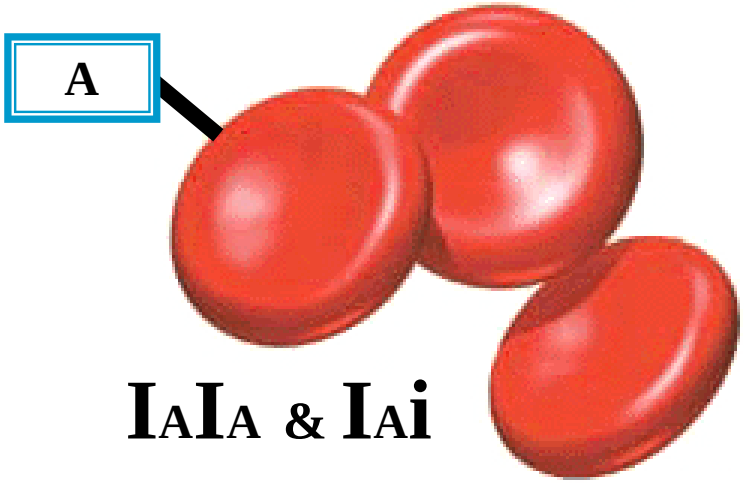
ii

QUESTION

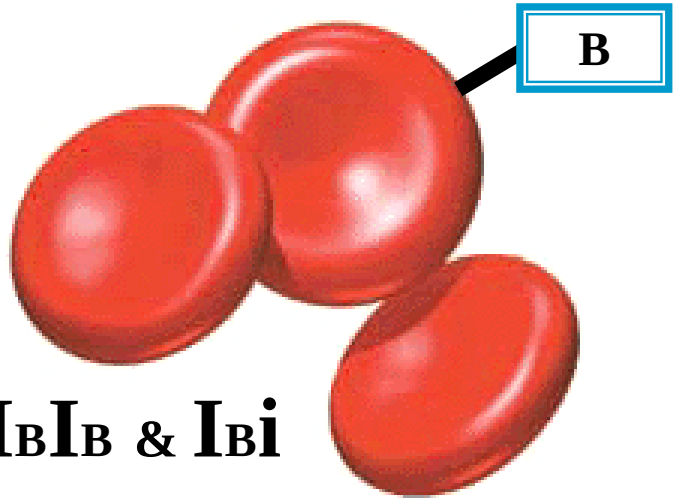
WHAT GENOTYPE & PHENOTYPE REPRESENTS CO-DOMINANCE?

QUESTION

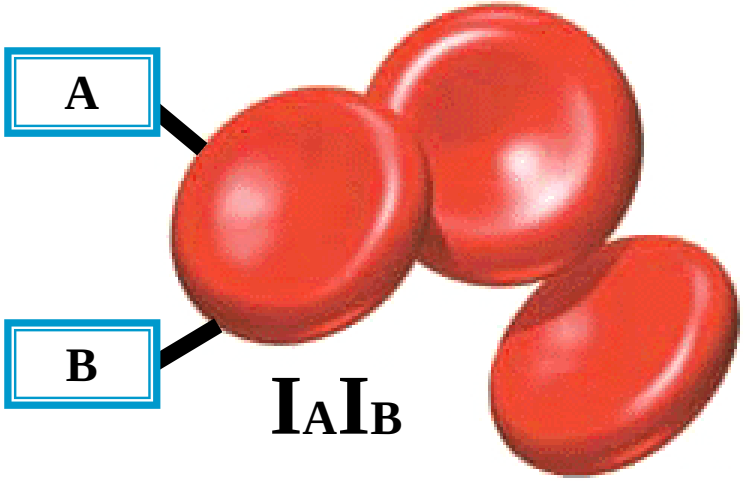
HUMAN BLOOD GENOTYPES



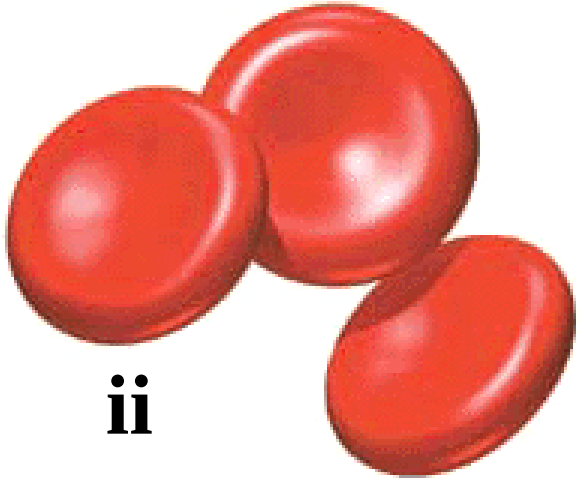
I^AI^A & I^Ai



I^BI^B & I^Bi



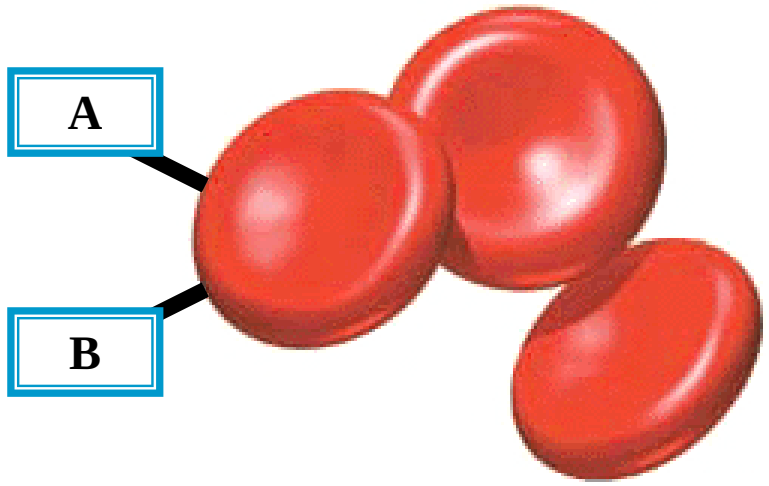
I^AI^B



ii

ANSWER

I_AI_B



AB BLOOD = CO-DOMINANCE

ANSWER

BLOOD TYPES
&
PATERNITY
DISPUTE

PATERNITY DISPUTE EXAMPLE

A HETEROZYGOUS A-TYPE MALE DISPUTES FATHERING AN O-TYPE CHILD WITH A HETEROZYGOUS B-TYPE FEMALE.

PATERNITY DISPUTE EXAMPLE

♂

HETEROZYGOUS A TYPE MALE

X

HETEROZYGOUS B TYPE FEMALE

MONO-HYBRID
BLOOD TYPE CROSS

A O

P1 = I i x

O	**O**
i	**i**

CHILD = O-TYPE

♀

HETEROZYGOUS A TYPE MALE

X

HETEROZYGOUS B TYPE FEMALE

MONO-HYBRID BLOOD TYPE CROSS

♂ **A O** ♀ **B O**

P1 = I i x I i

O	**O**
i	**i**

CHILD = O-TYPE

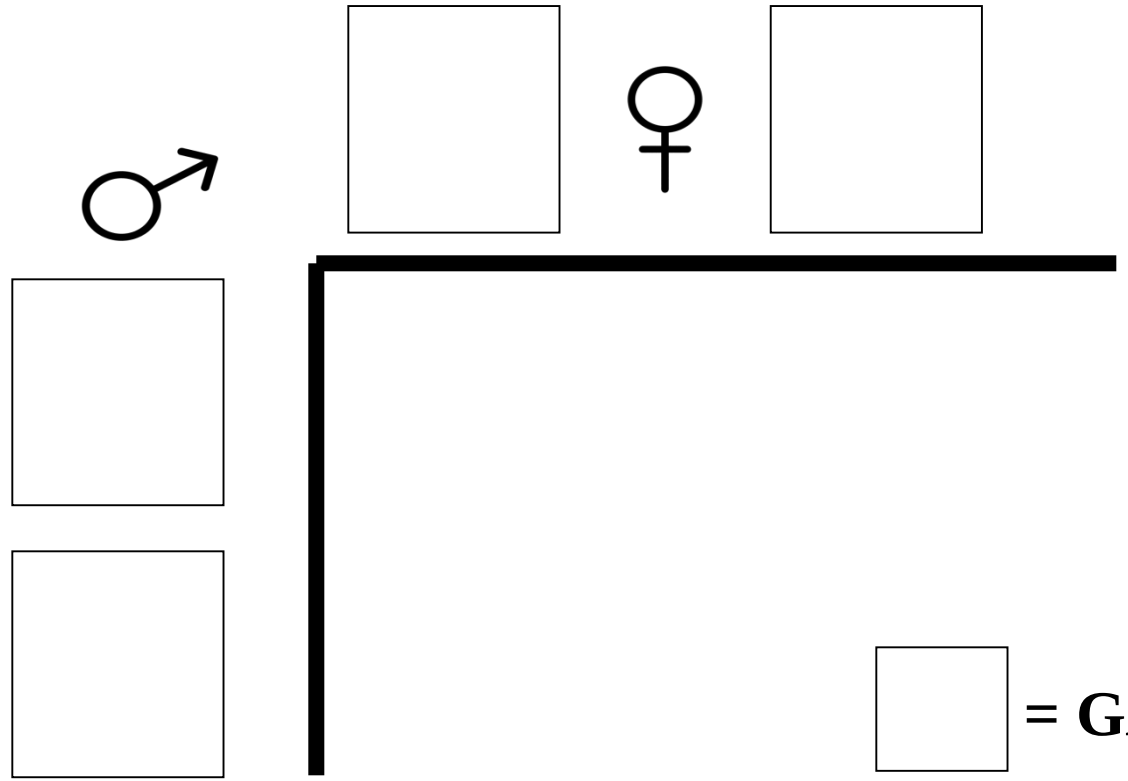
MONO-HYBRID BLOOD TYPE CROSS

♂ A O ♀ B O

P1 = I i x I i

O	O
i	i

CHILD = O-TYPE



PUNNETT SQUARE

= GAMETE

MONO-HYBRID BLOOD TYPE CROSS

♂ A O ♀ B O

P1 = I i x I i

	♀	
♂		
?		
?		

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE

= GAMETE

MONO-HYBRID BLOOD TYPE CROSS

♂ A O ♀ B O

P1 = I i x I i

A I		
O i		

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE

= GAMETE

MONO-HYBRID BLOOD TYPE CROSS

♂ A O ♀ B O

P1 = I i x I i

	? ♀	?
♂		
A I		
O i		

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE

= GAMETE

MONO-HYBRID BLOOD TYPE CROSS

♂ A O ♀ B O

P1 = I i x I i

O O
i i

CHILD = O-TYPE

B
I

♀

O
i

♂

PUNNETT SQUARE

A
I

O
i

= GAMETE

MONO-HYBRID BLOOD TYPE CROSS

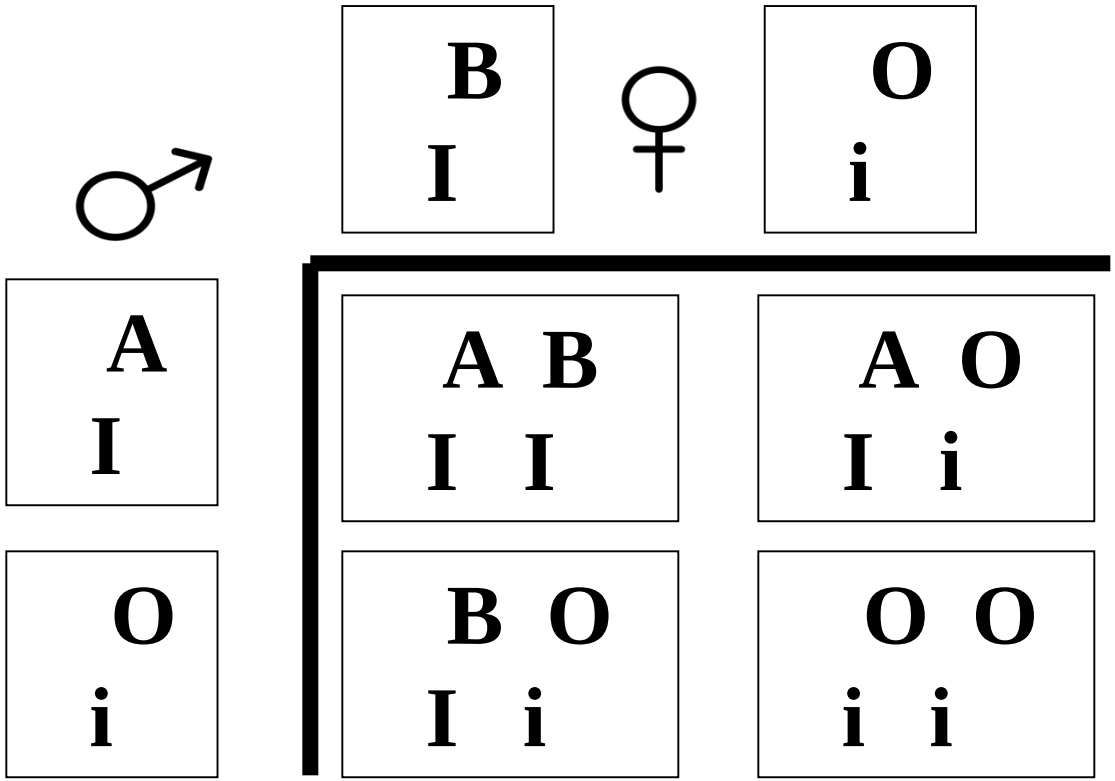
♂ A O ♀ B O

P1 = I i x I i

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE



QUESTION

COULD MALE BE THE FATHER?

QUESTION

MONO-HYBRID BLOOD TYPE CROSS

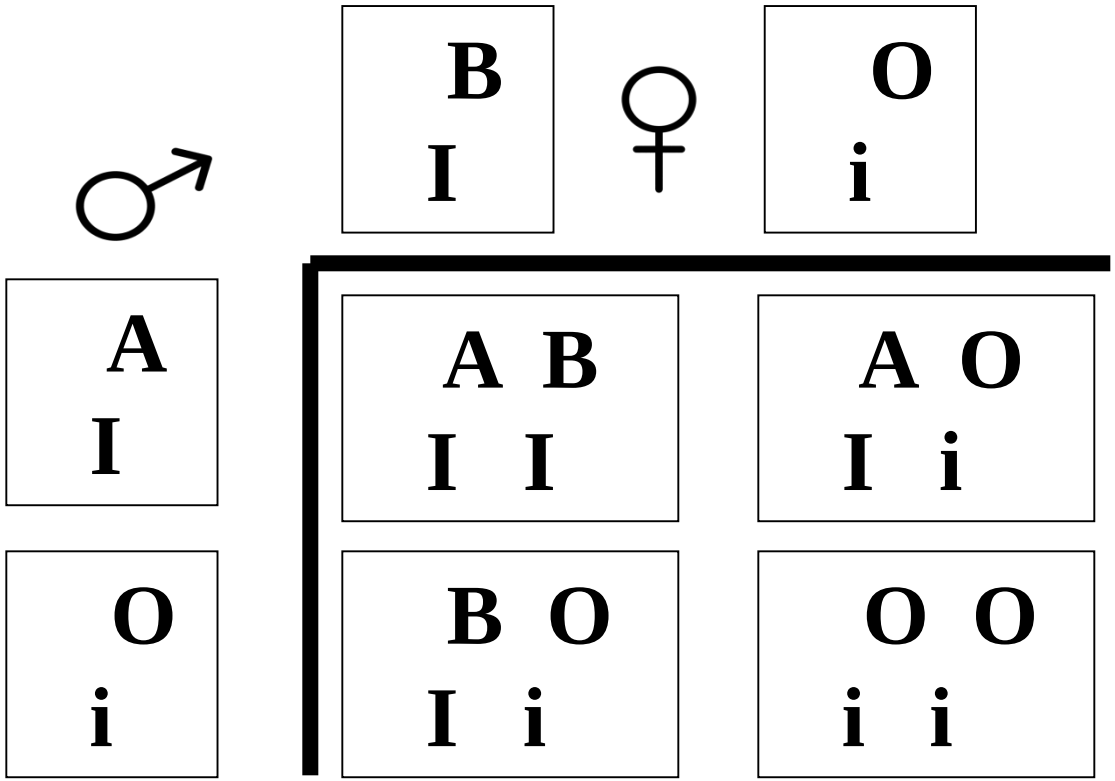
♂ A O ♀ B O

P1 = I i x I i

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE



MONO-HYBRID BLOOD TYPE CROSS

♂ A O ♀ B O

P1 = I i x I i

♂ \ ♀	B I	O i
A I	A B I I	A O I i
O i	B O I i	O O i i

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE

FATHER = 25%

ANSWER

YES

ANSWER

?

PATERNITY QUESTIONS

QUESTION

COULD A MALE WITH B-TYPE BLOOD BE THE FATHER?

QUESTION

MONO-HYBRID BLOOD TYPE CROSS

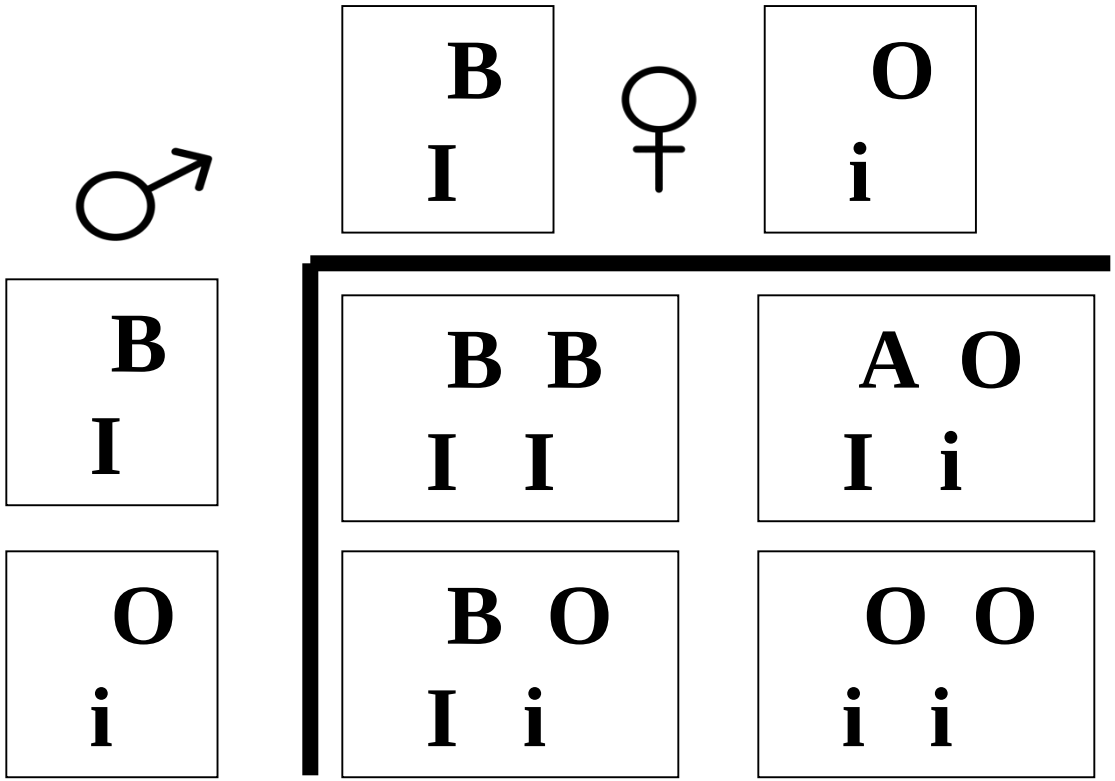
♂ B O ♀ B O

P1 = I i x I i

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE



MONO-HYBRID BLOOD TYPE CROSS

♂ B O ♀ B O

P1 = I i x I i

	B I	O i
B I	B B I I	A O I i
O i	B O I i	O O i i

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE

FATHER = 25%

?

ANSWER

YES

ANSWER

QUESTION

COULD A MALE WITH O-TYPE BLOOD BE THE FATHER?

QUESTION

MONO-HYBRID BLOOD TYPE CROSS

♂ O O ♀ B O

P1 = i i x I i

	B I	O i
O i	O B I I	O O i i
O i	O B i I	O O i i

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE

MONO-HYBRID BLOOD TYPE CROSS

♂ O O ♀ B O

P1 = i i x I i

	B I	O i
O i	O B I I	O O i i
O i	O B i I	O O i i

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE

FATHER = 50%

?

ANSWER

YES

ANSWER

QUESTION

COULD A MALE WITH AB-TYPE BLOOD BE THE FATHER?

QUESTION

MONO-HYBRID BLOOD TYPE CROSS

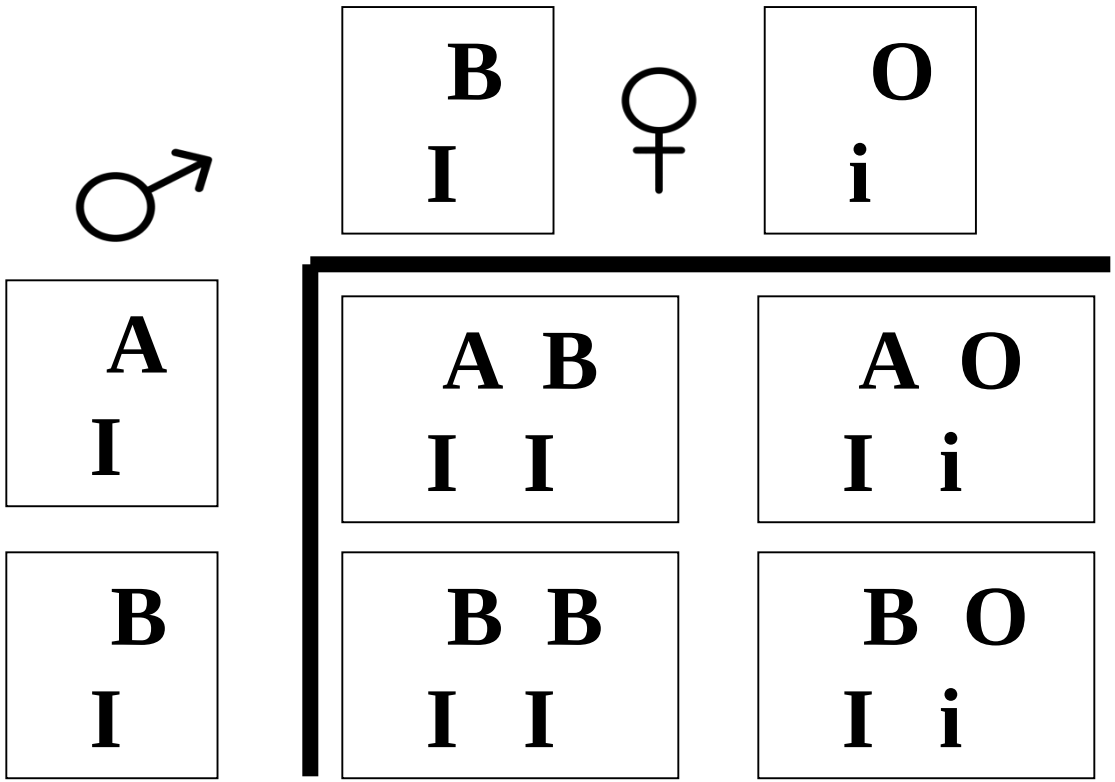
♂ A B ♀ B O

P1 = I I x I i

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE



MONO-HYBRID BLOOD TYPE CROSS

♂ A B ♀ B O

P1 = I I x I i

O O
i i

CHILD = O-TYPE

PUNNETT SQUARE

♂ \ ♀	B I	O i
A I	A B I I	A O I i
B I	B B I I	B O I i

FATHER = 0%

?

ANSWER

NO

ANSWER

*

A

QUESTION

TO BE THE FATHER THE MALE MUST HAVE WHAT ALLELE?

QUESTION

ANSWER

i

ANSWER

BLOOD TRANSFUSIONS

BLOOD TRANSFUSIONS

NON-COMPATIBLE BLOOD TYPES

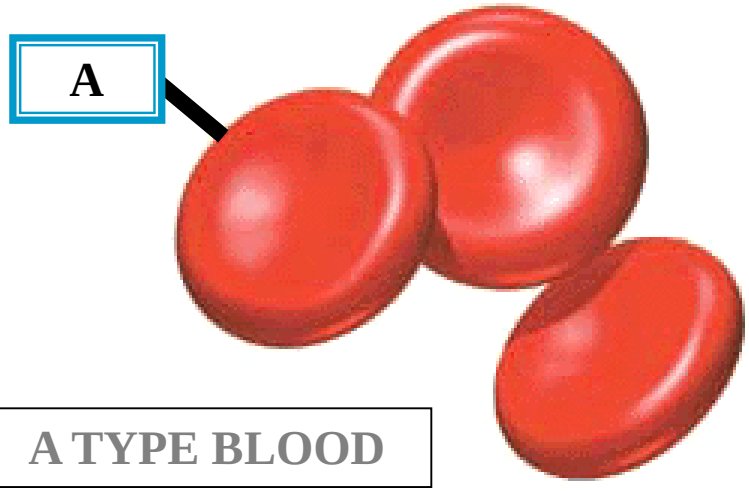
EG

BLOOD TRANSFUSIONS

NON-COMPATIBLE BLOOD TYPES IMPART IMMUNE RESPONSE

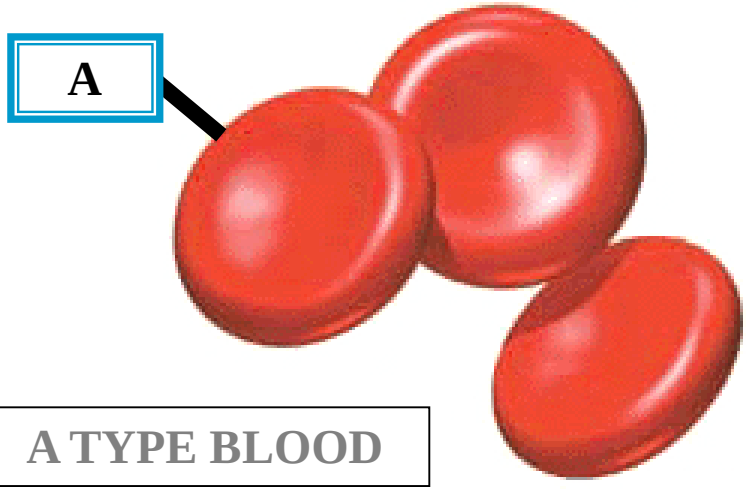
A-TYPE BLOOD

BLOOD TRANSFUSION

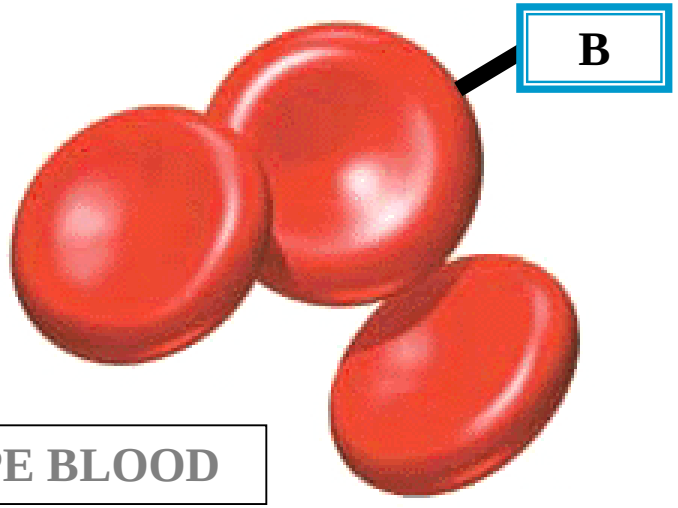


A TYPE BLOOD

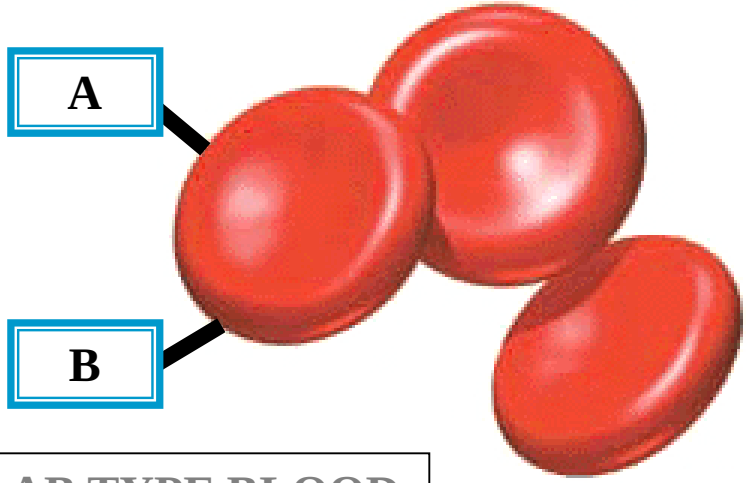
BLOOD TRANSFUSION



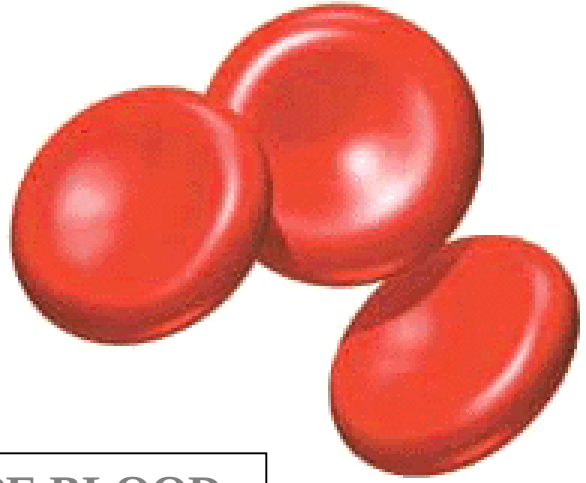
A TYPE BLOOD



B TYPE BLOOD

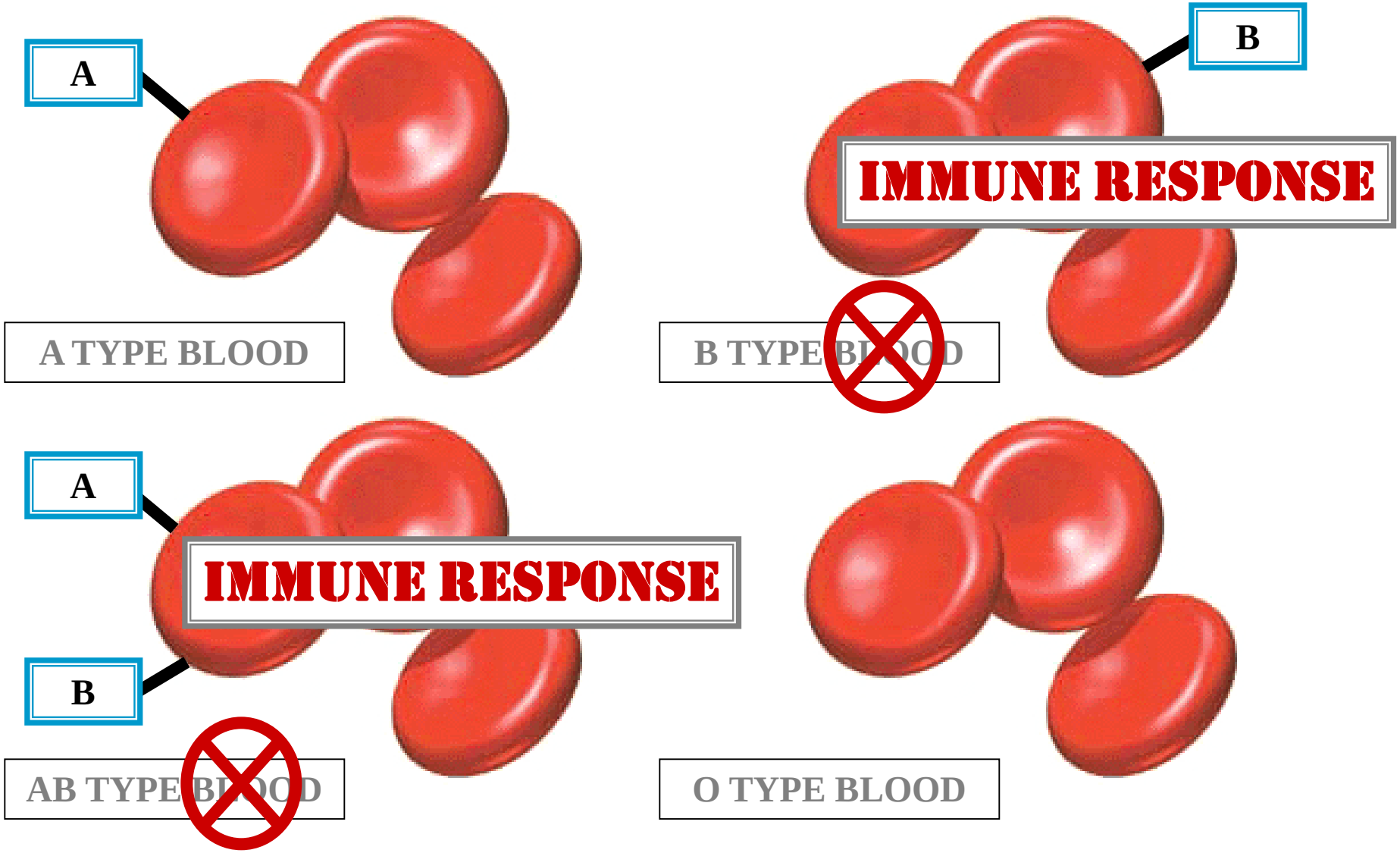


AB TYPE BLOOD

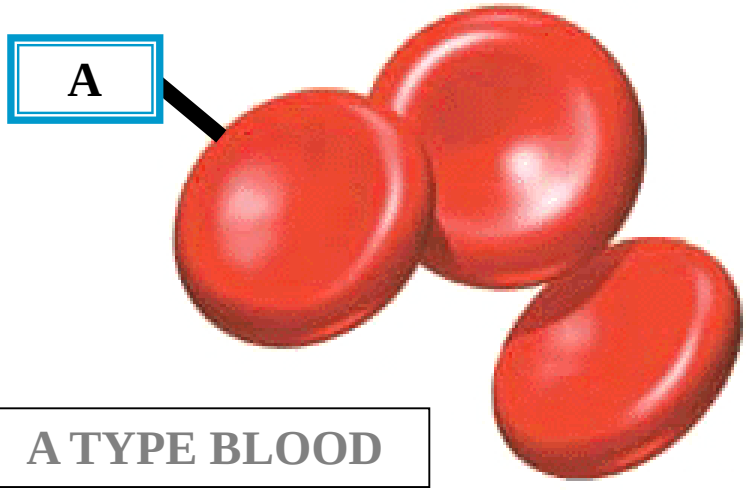


O TYPE BLOOD

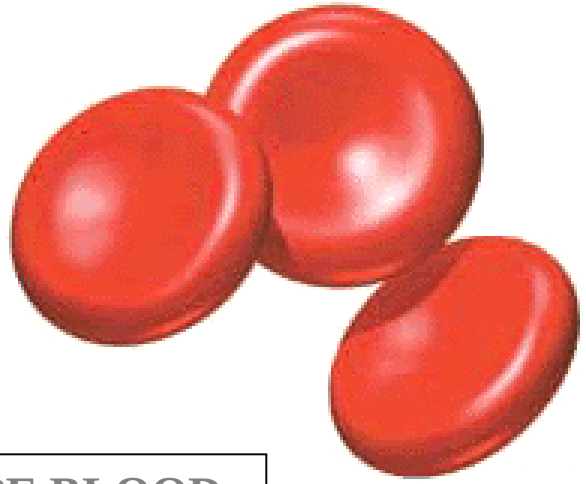
BLOOD TRANSFUSION



BLOOD TRANSFUSION



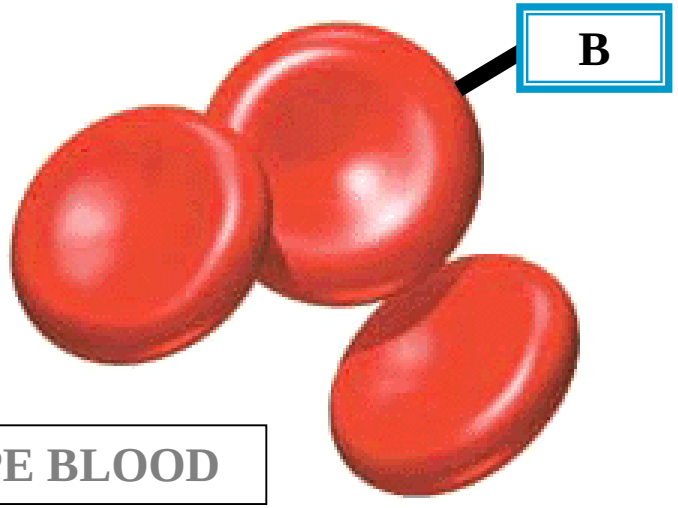
A TYPE BLOOD



O TYPE BLOOD

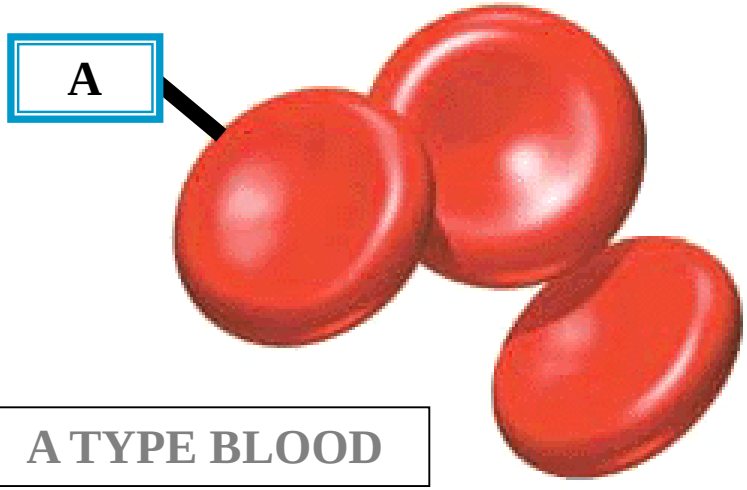
B-TYPE BLOOD

BLOOD TRANSFUSION

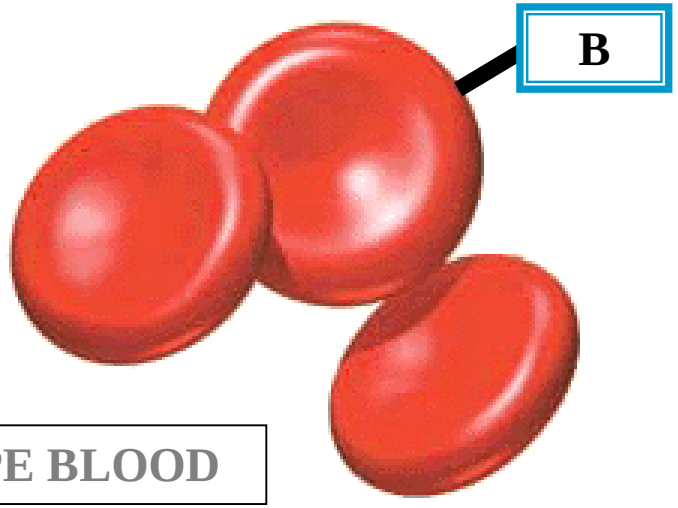


B TYPE BLOOD

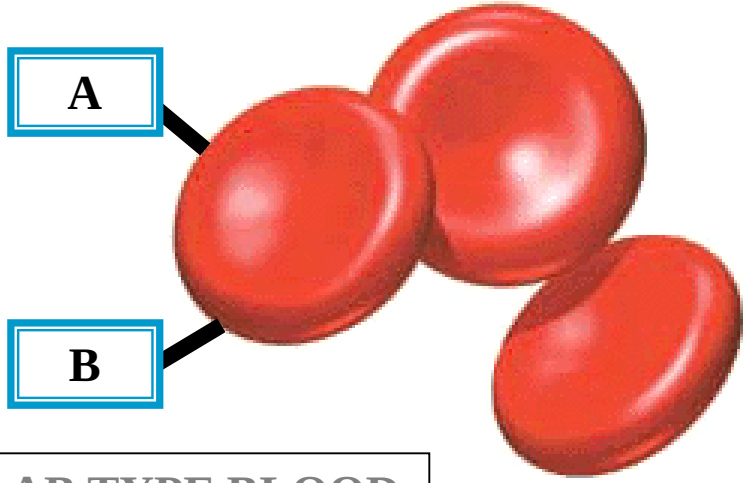
BLOOD TRANSFUSION



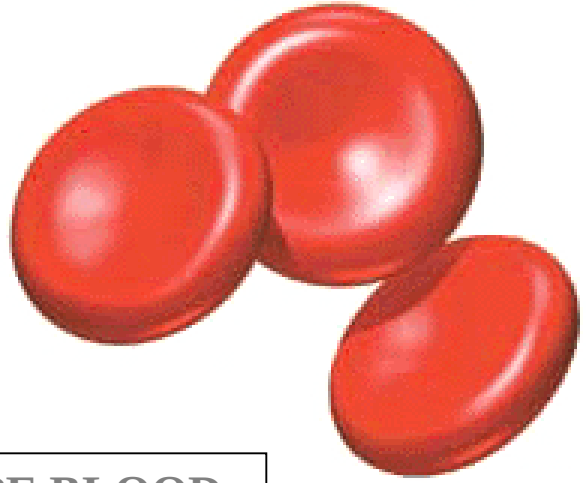
A TYPE BLOOD



B TYPE BLOOD

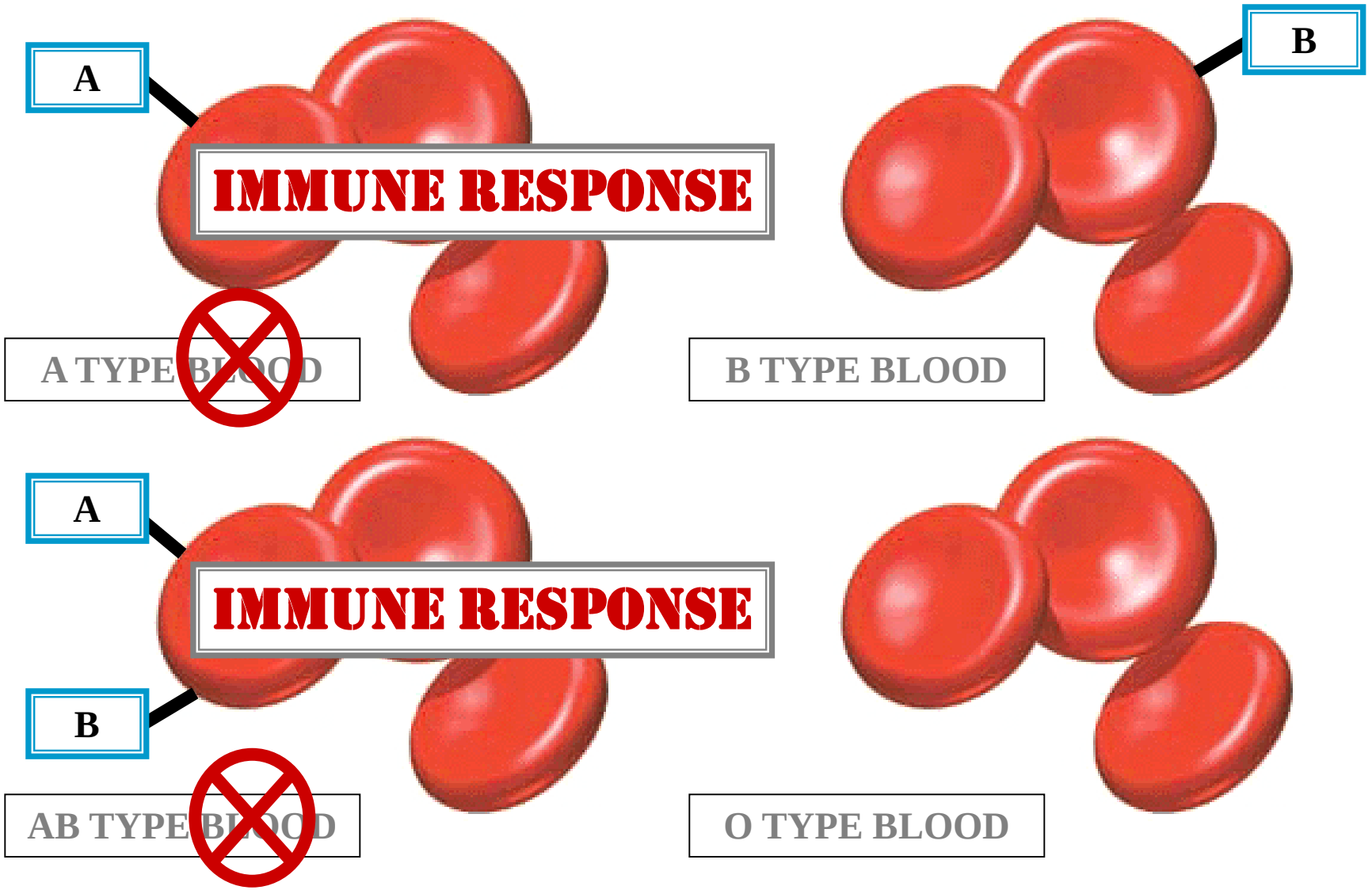


AB TYPE BLOOD

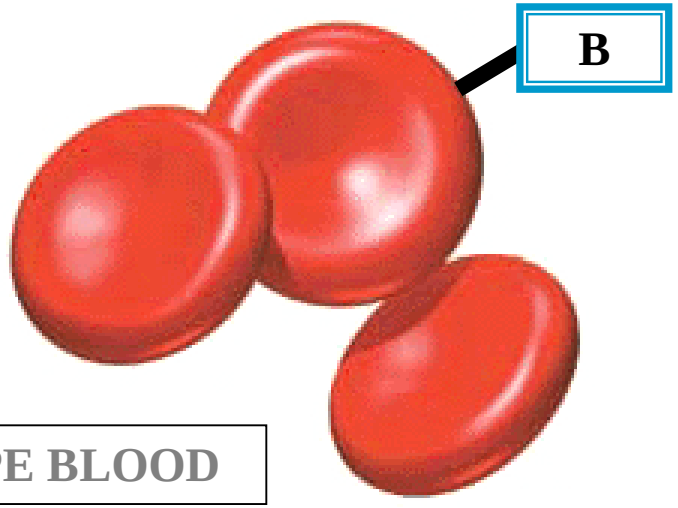


O TYPE BLOOD

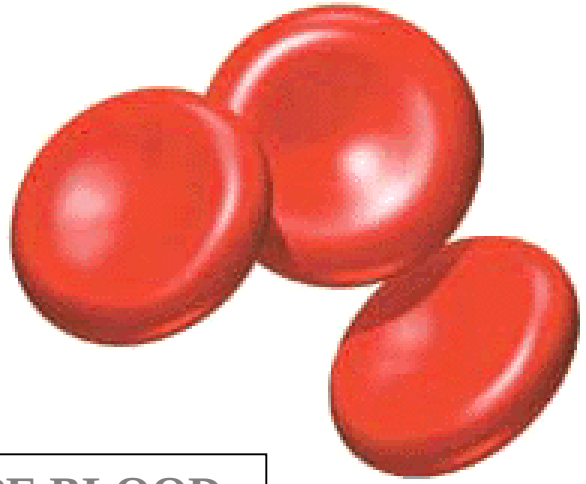
BLOOD TRANSFUSION



BLOOD TRANSFUSION



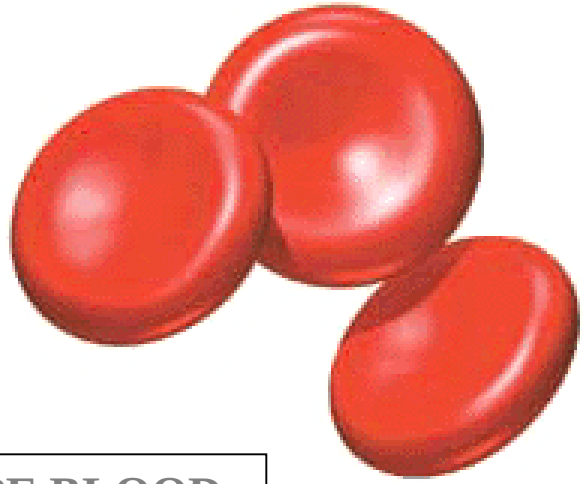
B TYPE BLOOD



O TYPE BLOOD

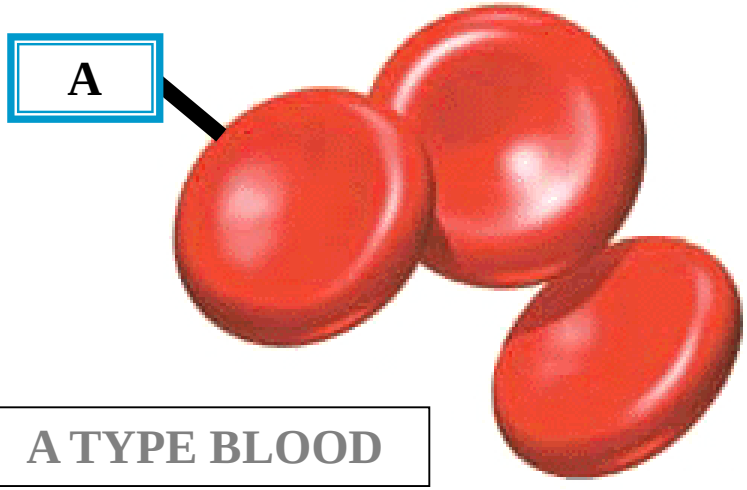
O-TYPE BLOOD

BLOOD TRANSFUSION

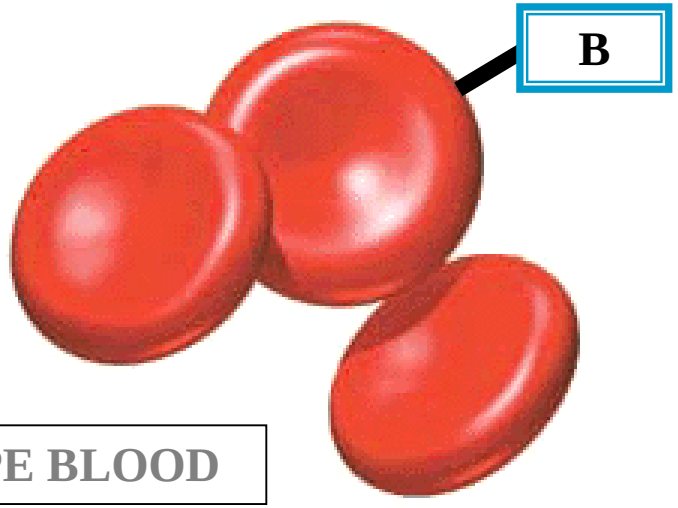


O TYPE BLOOD

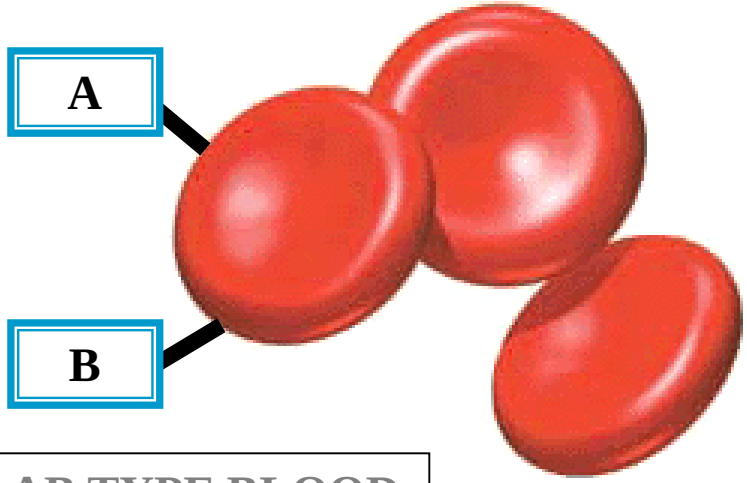
BLOOD TRANSFUSION



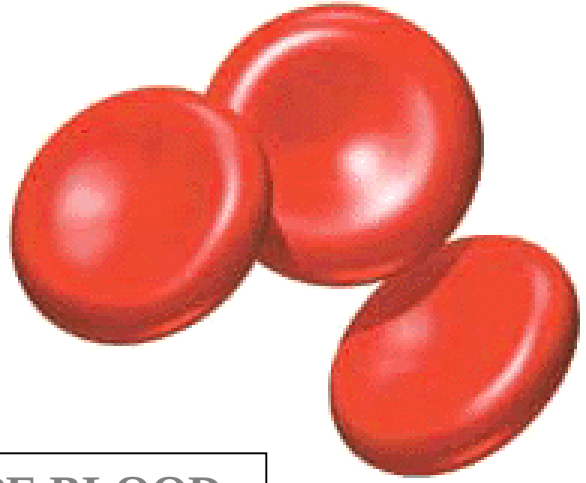
A TYPE BLOOD



B TYPE BLOOD

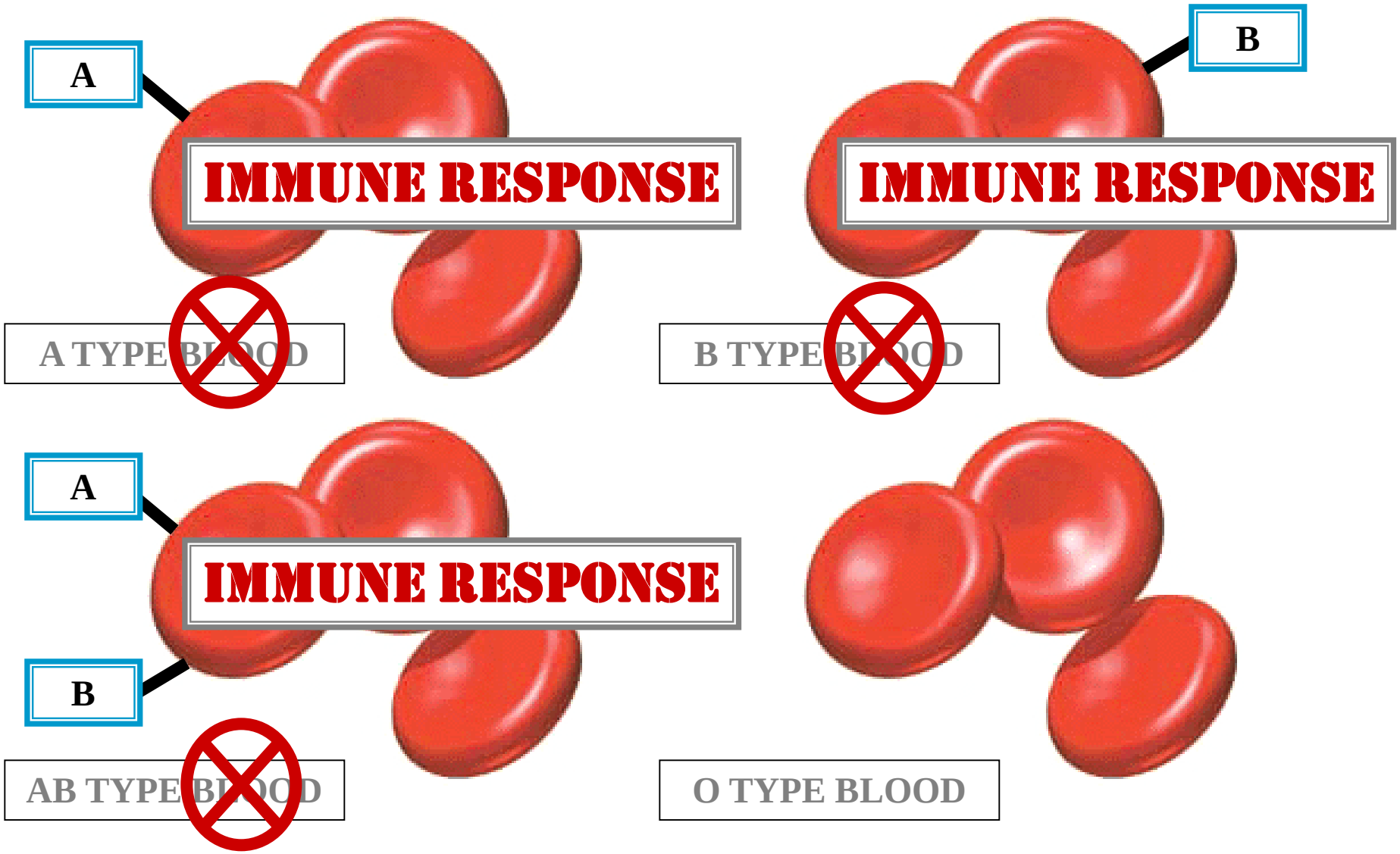


AB TYPE BLOOD

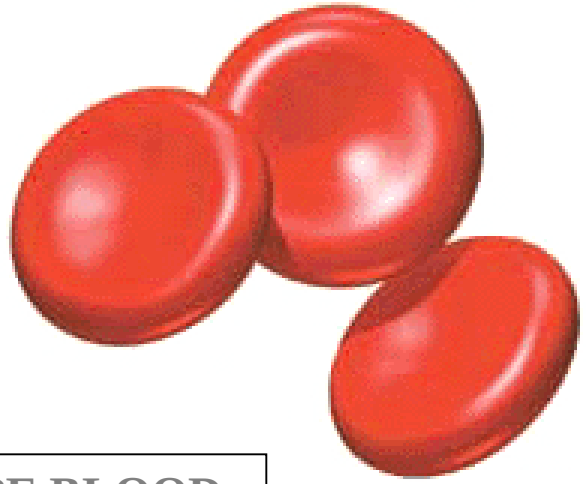


O TYPE BLOOD

BLOOD TRANSFUSION



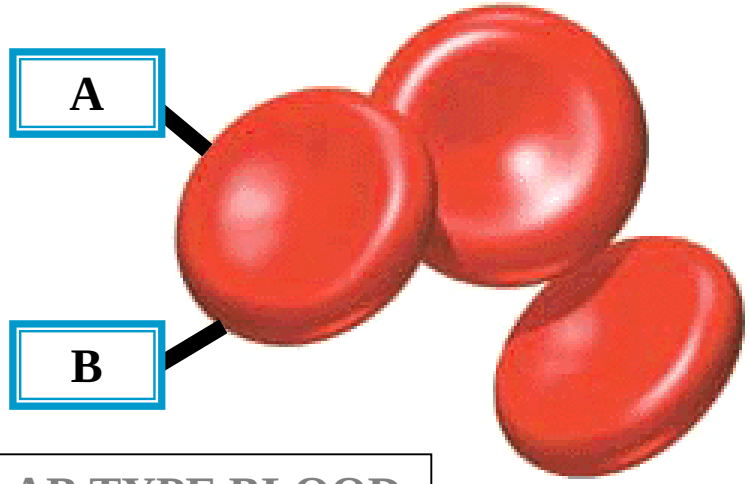
BLOOD TRANSFUSION



O TYPE BLOOD

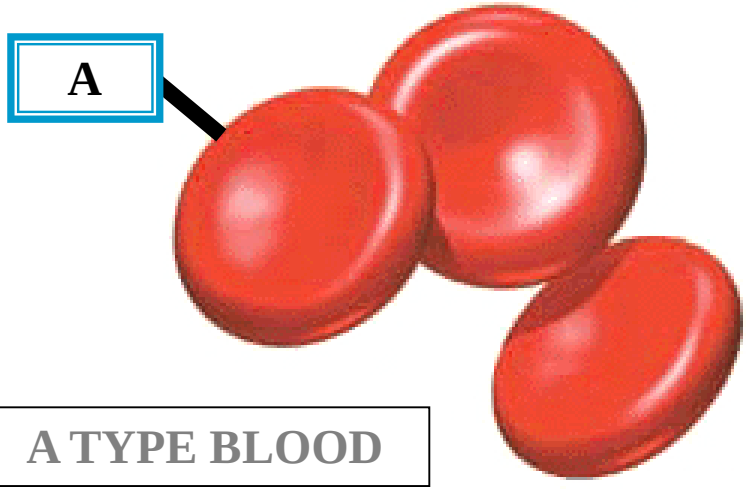
AB-TYPE BLOOD

BLOOD TRANSFUSION

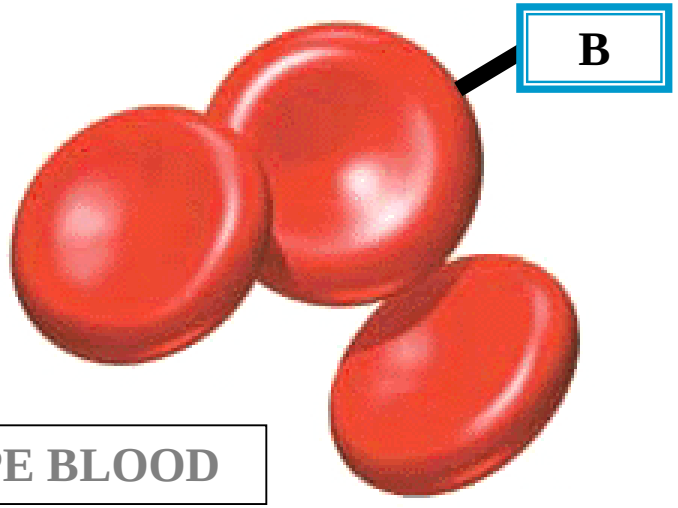


AB TYPE BLOOD

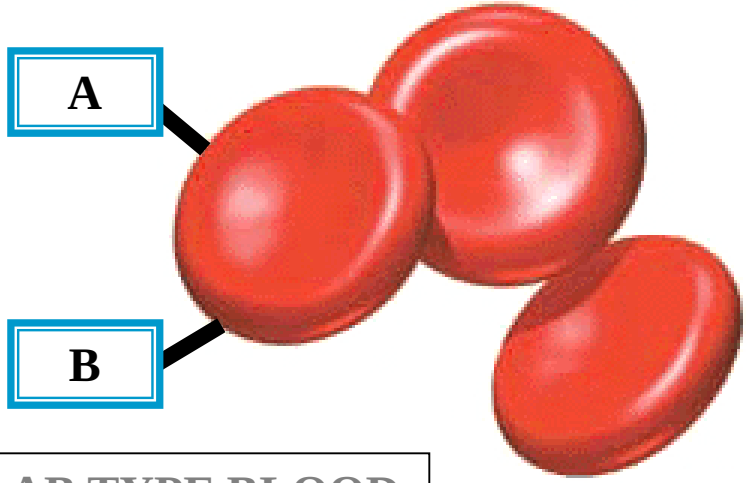
BLOOD TRANSFUSION



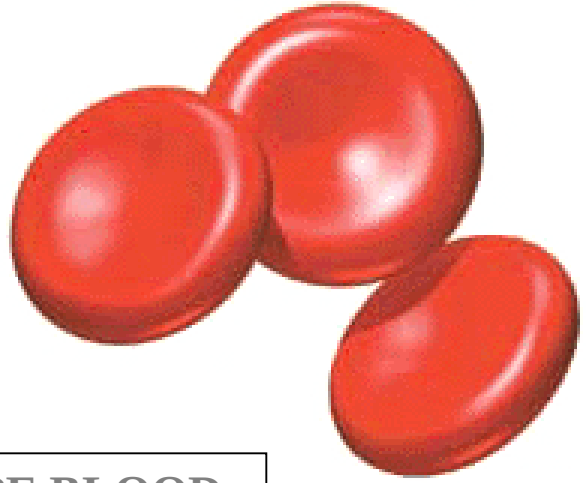
A TYPE BLOOD



B TYPE BLOOD



AB TYPE BLOOD

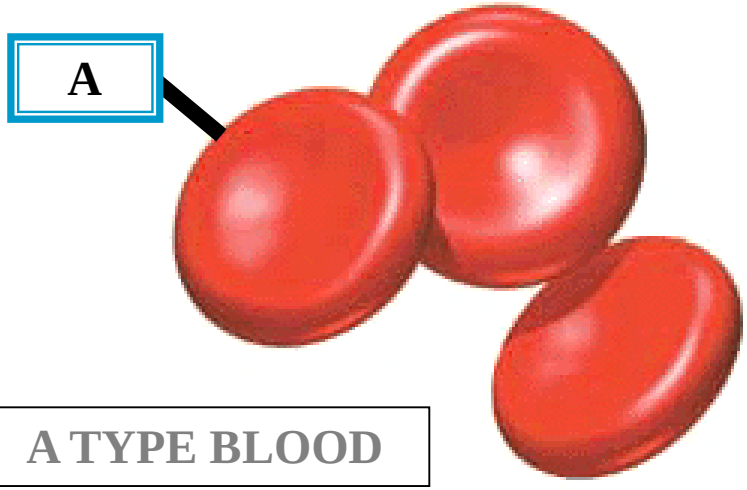


O TYPE BLOOD

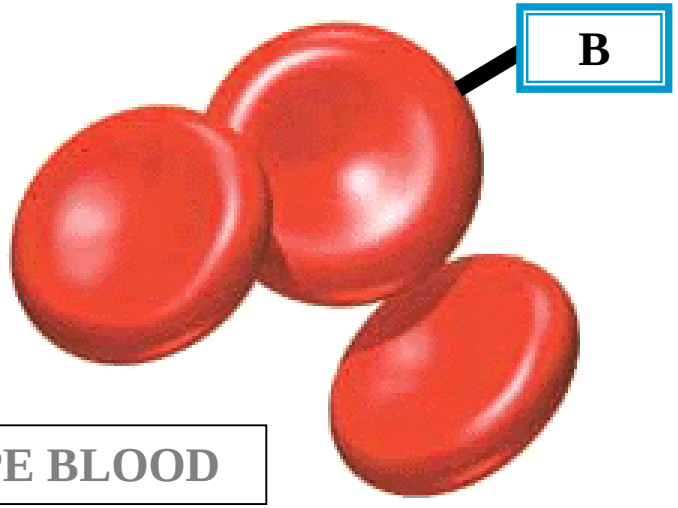
BLOOD TRANSFUSIONS

UNIVERSAL DONER

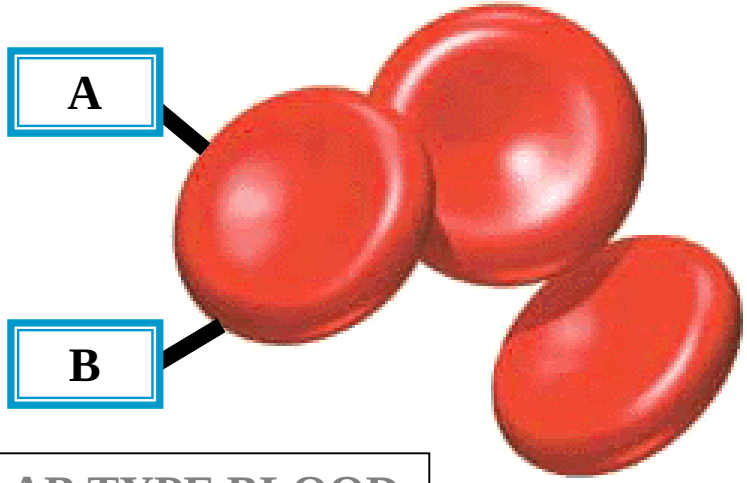
UNIVERSAL DONOR



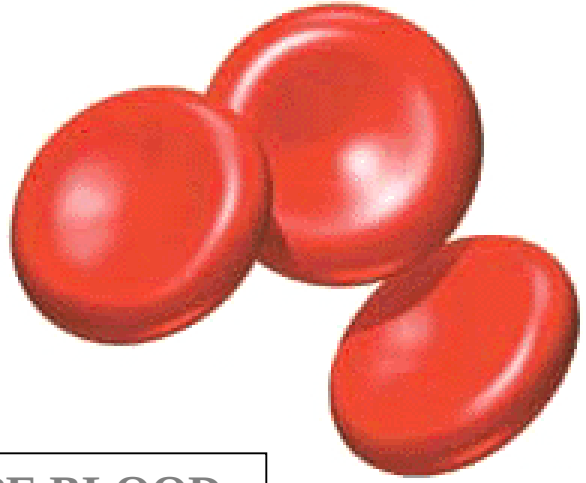
A TYPE BLOOD



B TYPE BLOOD



AB TYPE BLOOD



O TYPE BLOOD