Tetanus Antitoxins

Publication/Creation

c.1950-1963

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Wellcome Tetanus Antitoxin
and
Wellcome Refined Tetanus Antitoxin - Globulins

For the Medical Profession only

Directions for using
'WELLCOME'....
TETANUS ANTITOXIN

FOR PROPHYLAXIS in non-immune or incomplet
they are injured.

Types of wound for which tetanus prophylaxis is indic
1 All wounds more than three or four hours old,
taminated with pyogenic organisms.
2 Fresh wounds if deep or penetrating, however sma
3 Fresh wounds with contused, or otherwise devitali
4 Fresh wounds which cannot be completely closed.
5 Fresh wounds in all agricultural, sewage, or garage
all who have had road accidents, and most children

Dosage for patients of all ages: 1500 Units*, subcutan
soon as possible after injury. This may be repeated a
appears to continue. See " Procedures for Giving Ser

Duration of effect : The protection conferred by a s
maximum two or three days after injection ; it dimini
eliminated, an effective level being maintained for abo
sitised by previous injection of any horse serum may
The passive immunity conferred by Antitoxin should
longer-lasting, active immunity. This can be done by
Toxoid†, beginning six to eight weeks after the last inje

FOR TREATMENT

Tetanus Antitoxin should be given *at the earliest possib*
evident or reasonably probable. The Antitoxin neutralise
cannot influence that already fixed to the nerve cells.

Dosage for patients of all ages : 100,000 Units*, intrav
two days, then followed by 25,000 Units weekly until sy
25,000 Units should be given before any operation on th
for Giving Serum ", overleaf. Tetanus Antitoxin *should*

Concomitant treatment : Surgical treatment of the wound
In recent years muscle relaxants have been used to overc
Controlled respiration is frequently required during th
absolutely constant supervision by an anæsthetist or s
direction.

Packings available :

1,500 Units* in 1 c.c.	*Single ampoules and boxes of*
15,000 Units in 10 c.c.	*Rubber-capped bottles (i.e. 10*
10,000 Units in 2 c.c.	*Single ampoules*
50,000 Units in 10 c.c.	*Rubber-capped bottles*

Record the title, quantity and batch number of all serum
Note any reactions. Make a duplicate for the patient.

Storage : Optimum : 2° to 4° C.—potency will be reta
Allowable : below 15° C.—loss of potency will
Not recommended : above 15° C. At 37° C.—
cent per annum.

Excess Units are included when Antitoxin is packed so that,
of temperature specified on the carton, the stated number
expiry date.

†**'Wellcome'.... Tetanus Toxoid**

*The International Unit (July, 1950), equivalent to the U.S.A. Unit,
former (1928) International Unit

'WELLCOME'....
Tetanus Antitoxin (Tet/Ser)

For the Medical Profession only

FOR PROPHYLAXIS in non-immune or incompletely immunized persons when they are injured.

Types of wound for which tetanus prophylaxis is indicated :
1 All wounds more than three or four hours old, particularly if already contaminated with pyogenic organisms.
2 Fresh wounds if deep or penetrating, however small.
3 Fresh wounds with contused, or otherwise devitalised tissue.
4 Fresh wounds which cannot be completely closed.
5 Fresh wounds in all agricultural, sewage, or garage workers, all out-door athletes, all who have had road accidents, and most children.

Dosage for patients of all ages : 1500 Units*, subcutaneously or intramuscularly, as soon as possible after injury. This may be repeated at weekly intervals if the risk appears to continue. See " Procedures for Giving Serum ", overleaf.

Duration of effect : The protection conferred by a single dose is usually at its maximum two or three days after injection ; it diminishes slowly as the serum is eliminated, an effective level being maintained for about two weeks. Persons sensitised by previous injection of any horse serum may eliminate it more quickly. The passive immunity conferred by Antitoxin should always be supplemented by longer-lasting, active immunity. This can be done by giving a course of Tetanus Toxoid†, beginning six to eight weeks after the last injection of Antitoxin.

FOR TREATMENT

Tetanus Antitoxin should be given at the earliest possible moment after diagnosis is evident or reasonably probable. The Antitoxin neutralises only circulating toxin and cannot influence that already fixed to the nerve cells.

Dosage for patients of all ages : 100,000 Units*, intravenously, repeated in one or two days, then followed by 25,000 Units

Wellcome Tetanus Antitoxin
and
Wellcome Refined Tetanus Antitoxin - Globulins

'WELLCOME' BRAND
Tetanus Antitoxin (Tet/Ser)

For the Medical Profession only

FOR PROPHYLAXIS in non-immune or incompletely immunized persons when they are injured.

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Dosage for patients of all ages : 1500 Units*, subcutaneously or intramuscularly, as soon as possible after injury. This may be repeated at weekly intervals if the risk appears to continue. See "Procedures for Giving Serum", overleaf.

Duration of effect : The protection conferred by a single dose is usually at its maximum two or three days after injection ; it diminishes slowly as the serum is eliminated, an effective level being maintained for about two weeks. Persons sensitised by previous injection of any horse serum may eliminate it more quickly. The passive immunity conferred by Antitoxin should always be supplemented by longer-lasting, active immunity. This can be done by giving a course of Tetanus Toxoid†, beginning six to eight weeks after the last injection of Antitoxin.

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Tetanus Antitoxin should be given *at the earliest possible moment* after diagnosis is evident or reasonably probable. The Antitoxin neutralises only circulating toxin and cannot influence that already fixed to the nerve cells.

Dosage for patients of all ages : 100,000 Units*, intravenously, repeated in one or two days, then followed by 25,000 Units

weekly until symptoms abate. In addition, 25,000 Units should be given before any operation on the wound. See " Procedures for Giving Serum ", opposite. Tetanus Antitoxin *should not be given intrathecally*.

Concomitant treatment : Surgical treatment of the wound should be performed early. In recent years muscle relaxants have been used to overcome the spasms of tetanus. Controlled respiration is frequently required during the procedure, necessitating absolutely constant supervision by an anæsthetist or skilled personnel under his direction.

Packings available : 1500 Units* in 1 c.c. Single ampoules and boxes of 12 ampoules.
15,000 Units in 10 c.c. Rubber-capped bottles (i.e., 10 doses of 1500 Units.)
10,000 Units in 2 c.c. Single ampoules.
50,000 Units in 10 c.c. Rubber-capped bottles.

Record the title, quantity and batch number of all serum administered, and the date. Note any reactions. Make a duplicate for the patient.

Storage : 2° to 10° C. in a refrigerator.
Allowable : Up to 15° C. in a *cool dark place* provided the material is of recent manufacture and will not be stored for a long period of time.
Not Suitable : At or below freezing-point or above 15° C.

Excess Units are included when Antitoxin is packed so that when stored by the user between 2° and 10° C. the stated number of Units will remain at the expiry date.
If multi-dose containers are kept for intermittent use sterility must be maintained and storage must be under optimal conditions.

AVOIDING REACTIONS

The use of enzyme-refined serum has reduced the incidence of all serum reactions to about 5 per cent ; most are transient rashes, but the following reactions are possible :

1 **Anaphylactic shock :** may appear within a few minutes of injection or, with less intensity, up to two hours afterwards, in sensitive individuals. It is a rare, but dangerous, syndrome of dyspnœa, pallor and collapse. For treatment, see opposite.

2 **Serum sickness :** may appear after 7 to 12 days (delayed) or, less commonly, after three to four days (accelerated) in those who have had serum previously. It is a syndrome of pyrexia, rashes, œdema, and joint-pains.

3 **Local reaction :** may appear after 7 to 10 days and last two days. It consists of erythema and urticaria, without constitutional disturbance.

Serum sickness and local reactions are often relieved by an antihistamine drug, given orally. The local reactions will usually be relieved by an antipruritic application.

Avoiding anaphylactic shock and handling it when it occurs are prime responsibilities of all who administer sera ; they can usually be met by the following :

PROCEDURES FOR GIVING SERUM

Whenever serum is given, whatever the dose or route, a hypodermic syringe and a solution of adrenaline 1 : 1000 should be at hand.

IF ANAPHYLAXIS OCCURS give 1 c.c. of the solution of adrenaline, intramuscularly, immediately, and 0·5 c.c. every 20 minutes if the blood pressure remains below 100 mm. Hg. (adults). The patient must be kept warm and lying down with his head low. If urticaria or œdema develops a full dose of an antihistamine drug, given intramuscularly, is indicated.

To guard against potential anaphylaxis the following system is recommended :

1 **Patient has no history of asthma or infantile eczema and has not had serum before :** Give the whole dose of serum subcutaneously or intramuscularly and keep him under observation for 30 minutes.

2 **Patient has received serum before :** Give 0·2 c.c. subcutaneously. If no *general* symptoms develop within 30 minutes give the whole dose subcutaneously or intramuscularly and keep him under observation for another 30 minutes.

3 **Patient has a history of asthma or allergic eczema :** Make a 1 : 10 dilution of the serum and give 0·2 c.c. of this subcutaneously. If there are no *general* reactions after 30 minutes give 0·2 c.c. of undiluted serum subcutaneously. If, after another 30 minutes, there are no *general* reactions give the main dose subcutaneously or intramuscularly. Keep the patient under observation for another half an hour.

4 **Patient has a doubtful history of asthma or allergic diathesis or if there is doubt about previous receipt of serum :** Follow method 2, see previous page.

INTRAVENOUS INJECTION must never be given until it has been determined that serum is tolerated. For a non-allergic patient, who has not had serum before, 1 c.c. is given intramuscularly and he is watched for at least 30 minutes. If no general reaction occurs the main dose may be given intravenously. The injection is given very slowly and stopped if there is any distress. The patient is kept recumbent for at least one hour after injection.

For allergic patients and those who have had serum before, the subcutaneous test-doses described above must be given, at 30 minute intervals, before these intramuscular and intravenous injections.

Serum after Anaphylaxis : After the blood pressure has returned to normal (this takes 6 to 12 hours) the trial-dose of 0·2 c.c. of undiluted serum, given subcutaneously, may be repeated. If no general reaction occurs within 30 minutes the full dose may be given subcutaneously or intramuscularly. Recurrence of anaphylactic shock is extremely rare though accelerated serum sickness may supervene.

Combined Active-Passive Immunization of the Casualty : When a patient has never been immunized against tetanus, it is possible to give combined active-passive immunity by using 'Wellcome' brand Tetanus Antitoxin and 'Wellcome' brand Tetanus Toxoid (Adsorbed)†.

1500 Units of Tetanus Antitoxin should be injected into one arm, and 0·5 c.c. of Tetanus Toxoid (Adsorbed) into the other. A second dose of Adsorbed Tetanus Toxoid should be given six weeks later. A third dose of Toxoid (which need not be adsorbed) should be given 6–12 months after the second dose to maintain a satisfactory immunity for a further period of five years.

***The International Unit (July, 1950), equivalent to the U.S.A. Unit, and twice the potency of the former (1928) International Unit**

†'Wellcome' BRAND Tetanus Toxoid (Adsorbed) Tet/Vac/ADS

Prepared at the Wellcome Research Laboratories Beckenham, England

BURROUGHS WELLCOME & CO., LONDON

(The Wellcome Foundation Ltd.)

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Directions for using 'WELLCOME' BRAND TETANUS ANTITOXIN

FOR PROPHYLAXIS in non-immune or incompletely immunised persons when they are injured.

Types of wound for which tetanus prophylaxis is indicated :

1 All wounds more than three or four hours old, particularly if already contaminated with pyogenic organisms.
2 Fresh wounds if deep or penetrating, however small.
3 Fresh wounds with contused, or otherwise devitalised tissue.
4 Fresh wounds which cannot be completely closed.
5 Fresh wounds in all agricultural, sewage, or garage workers, all out-door athletes, all who have had road accidents, and most children.

Dosage for patients of all ages: 1500 Units*, subcutaneously or intramuscularly, as soon as possible after injury. This may be repeated at weekly intervals if the risk appears to continue. See " Procedures for Giving Serum ", overleaf.

Duration of effect : The protection conferred by a single dose is usually at its maximum two or three days after injection ; it diminishes slowly as the serum is eliminated, an effective level being maintained for about two weeks. Persons sensitised by previous injection of any horse serum may eliminate it more quickly. The passive immunity conferred by Antitoxin should always be supplemented by longer-lasting, active immunity. This can be done by giving a course of Tetanus Toxoid†, beginning six to eight weeks after the last injection of Antitoxin.

FOR TREATMENT

Tetanus Antitoxin should be given *at the earliest possible moment* after diagnosis is evident or reasonably probable. The Antitoxin neutralises only circulating toxin and cannot influence that already fixed to the nerve cells.

Dosage for patients of all ages : 100,000 Units*, intravenously, repeated in one or two days, then followed by 25,000 Units weekly until symptoms abate. In addition, 25,000 Units should be given before any operation on the wound. See " Procedures for Giving Serum ", overleaf. Tetanus Antitoxin *should not be given intrathecally*.

Concomitant treatment : Surgical treatment of the wound should be performed early. In recent years muscle relaxants have been used to overcome the spasms of tetanus. Controlled respiration is frequently required during the procedure, necessitating absolutely constant supervision by an anæsthetist or skilled personnel under his direction.

Packings available :

1,500 Units* in 1 c.c.	*Single ampoules and boxes of* 12 *ampoules*
15,000 Units in 10 c.c.	*Rubber-capped bottles (i.e.* 10 *doses of* 1500 *Units)*
10,000 Units in 2 c.c.	*Single ampoules*
50,000 Units in 10 c.c.	*Rubber-capped bottles*

Record the title, quantity and batch number of all serum administered, and the date. Note any reactions. Make a duplicate for the patient.

Storage : Optimum : 2° to 4° C.—potency will be retained almost indefinitely.
Allowable : below 15° C.—loss of potency will be 3 per cent per annum.
Not recommended : above 15° C. At 37° C.—loss will be 10 to 20 per cent per annum.

Excess Units are included when Antitoxin is packed so that, when stored within the range of temperature specified on the carton, the stated number of Units will remain at the expiry date.

†**'Wellcome' BRAND Tetanus Toxoid**

*The International Unit (July, 1950), equivalent to the U.S.A. Unit, and twice the potency of the former (1928) International Unit

AVOIDING REACTIONS

The use of enzyme-refined serum has reduced the incidence of all serum reactions to about 5 per cent; most are transient rashes, but the following reactions are possible:

1 **Anaphylactic shock**: may appear within a few minutes of injection or, with less intensity, up to two hours afterwards, in sensitive individuals. It is a rare, but dangerous, syndrome of dyspnœa, pallor and collapse. For treatment, see below.

2 **Serum sickness**: may appear after 7 to 12 days (delayed) or, less commonly, after three to four days (accelerated) in those who have had serum previously. It is a syndrome of pyrexia, rashes, œdema, and joint-pains.

3 **Local reaction**: may appear after 7 to 10 days and last two days. It consists of erythema and urticaria, without constitutional disturbance.

Serum sickness and local reactions are often relieved by an antihistamine drug, given orally. The local reactions will usually be relieved by an antipruritic application.

Avoiding anaphylactic shock and handling it when it occurs are prime responsibilities of all who administer sera; they can usually be met by the following:

PROCEDURES FOR GIVING SERUM

Whenever serum is given, whatever the dose or route, a hypodermic syringe and a solution of adrenaline 1 : 1000 should be at hand.

IF ANAPHYLAXIS OCCURS give 1 c.c. of the solution of adrenaline, intramuscularly, immediately, and 0·5 c.c. every 20 minutes if the blood pressure remains below 100 mm. Hg. (adults). The patient must be kept warm and lying down with his head low. If urticaria or œdema develops a full dose of an antihistamine drug, given intramuscularly, is indicated.

To guard against potential anaphylaxis the following system is recommended:

1 **Patient has no history of asthma or infantile eczema and has not had serum before**: Give the whole dose of serum subcutaneously or intramuscularly and keep him under observation for 30 minutes

2 **Patient has received serum before**: Give 0·2 c.c. subcutaneously. If no *general* symptoms develop within 30 minutes give the whole dose subcutaneously or intramuscularly and keep him under observation for another 30 minutes.

3 **Patient has a history of asthma or allergic eczema**: Make a 1 : 10 dilution of the serum and give 0·2 c.c. of this subcutaneously. If there are no *general* reactions after 30 minutes give 0·2 c.c. of undiluted serum subcutaneously. If, after another 30 minutes, there are no *general* reactions give the main dose subcutaneously or intramuscularly. Keep the patient under observation for another half an hour.

4 **Patient has a doubtful history of asthma or allergic diathesis or if there is doubt about previous receipt of serum**: Follow method 2, above.

INTRAVENOUS INJECTION must never be given until it has been determined that serum is tolerated. For a non-allergic patient, who has not had serum before, 1 c.c. is given intramuscularly and he is watched for at least 30 minutes. If no general reaction occurs the main dose may be given intravenously. The injection is given very slowly and stopped if there is any distress. The patient is kept recumbent for at least one hour after injection.

For allergic patients and those who have had serum before, the subcutaneous test-doses described above must be given, at 30 minute intervals, before these intramuscular and intravenous injections.

Serum after Anaphylaxis: After the blood pressure has returned to normal (this takes 6 to 12 hours) the trial-dose of 0·2 c.c. of undiluted serum, given subcutaneously, may be repeated. If no general reaction occurs within 30 minutes the full dose may be given subcutaneously or intramuscularly. Recurrence of anaphylactic shock is extremely rare though accelerated serum sickness may supervene.

Prepared at **THE WELLCOME RESEARCH LABORATORIES**
Langley Court, BECKENHAM, England

Supplied by
BURROUGHS WELLCOME & CO., LONDON
(The Wellcome Foundation Ltd.)

Associated Houses: Auckland Bombay Buenos Aires Dublin Johannesburg Karachi Montreal Nairobi New York Rio de Janeiro Rome Sydney

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Directions for using 'WELLCOME' BRAND TETANUS ANTITOXIN

FOR PROPHYLAXIS in non-immune or incompletely immunised persons when they are injured.

Types of wound for which tetanus prophylaxis is indicated :

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5 Fresh wounds in all agricultural, sewage, or garage workers, all out-door athletes, all who have had road accidents, and most children.

Dosage for patients of all ages : 1500 Units*, subcutaneously or intramuscularly, as soon as possible after injury. This may be repeated at weekly intervals if the risk appears to continue. See " Procedures for Giving Serum ", overleaf.

Duration of effect : The protection conferred by a single dose is usually at its maximum two or three days after injection ; it diminishes slowly as the serum is eliminated, an effective level being maintained for about two weeks. Persons sensitised by previous injection of any horse serum may eliminate it more quickly. The passive immunity conferred by Antitoxin should always be supplemented by longer-lasting, active immunity. This can be done by giving a course of Tetanus Toxoid, beginning six to eight weeks after the last injection of Antitoxin.

FOR TREATMENT

Tetanus Antitoxin should be given *at the earliest possible moment* after diagnosis is evident or reasonably probable. The Antitoxin neutralises only circulating toxin and cannot influence that already fixed to the nerve cells.

Dosage for patients of all ages : 100,000 Units*, intravenously, repeated in one or two days, then followed by 25,000 Units weekly until symptoms abate. In addition, 25,000 Units should be given before any operation on the wound. See " Procedures for Giving Serum ", overleaf. Tetanus Antitoxin *should not be given intrathecally.*

Concomitant treatment : Surgical treatment of the wound should be performed early. In recent years muscle relaxants have been used to overcome the spasms of tetanus. Controlled respiration is frequently required during the procedure, necessitating absolutely constant supervision by an anæsthetist or skilled personnel under his direction.

Packings available :

1500 Units*	**in 1 c.c.**	*Single ampoules and boxes of* 12 *ampoules*
15,000 Units	**in 10 c.c.**	*(i.e.,* 10 *doses of* 1500 *Units) Rubber-capped bottles*
10,000 Units	**in 2 c.c.**	*Single ampoules*
50,000 Units	**in 10 c.c.**	*Rubber-capped bottles*

Record the title, quantity and batch number of all serum administered, and the date. Note any reactions. Make a duplicate for the patient.

Storage : Optimum : 2° to 4° C.
Allowable : Up to 15° C.
Not suitable : At or below freezing point or above 15° C.

Excess Units are included when Antitoxin is packed so that, when stored within the range of temperature specified on the carton, the stated number of Units will remain at the expiry date.

***The International Unit (July 1950), equivalent to the U.S.A. Unit, and twice the potency of the former (1928) International Unit**

Printed by The Tabloid Press, Dartford, England

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3 **Patient has a history of asthma or allergic eczema :** Make a 1 : 10 dilution of the serum and give 0·2 c.c. of this subcutaneously. If there are no *general* reactions after 30 minutes give 0·2 c.c. of undiluted serum subcutaneously. If, after another 30 minutes, there are no *general* reactions give the main dose subcutaneously or intramuscularly. Keep the patient under observation for another half an hour.

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INTRAVENOUS INJECTION must never be given until it has been determined that serum is tolerated. For a non-allergic patient, who has not had serum before, 1 c.c. is given intramuscularly and he is watched for at least 30 minutes. If no general reaction occurs the main dose may be given intravenously. The injection is given very slowly and stopped if there is any distress. The patient is kept recumbent for at least one hour after injection.

For allergic patients and those who have had serum before, the subcutaneous test-doses described above must be given, at 30 minute intervals, before these intramuscular and intravenous injections.

Serum after Anaphylaxis : After the blood pressure has returned to normal (this takes 6 to 12 hours) the trial-dose of 0·2 c.c. of undiluted serum, given subcutaneously, may be repeated. If no general reaction occurs within 30 minutes the full dose may be given subcutaneously or intramuscularly. Recurrence of anaphylactic shock is extremely rare though accelerated serum sickness may supervene.

Prepared at the **WELLCOME RESEARCH LABORATORIES**
Langley Court, BECKENHAM, England

Supplied by
BURROUGHS WELLCOME & CO. (AUSTRALIA) LTD.
(Incorporated in England)
Telephone : FF 2281 (6 *lines*) G.P.O. Box No. 1485
SYDNEY, N.S.W.

INDEPENDENCE DAY 1904

The usual high spirits of young Americans, the usual 4th July fireworks, the usual blank cartridge and firework wounds—and next week, no doubt, the usual 95 per cent of deaths from tetanus. But no! In the year 1904, antitetanic serum saved the life of every person to whom it was given prophylactically.

Since 1904, profound advances have been made in the prophylaxis of tetanus. Due in no small part to work at The Wellcome Research Laboratories, the dose has been reduced from the 50 - 100 c.c. then necessary to the 1 - 3 c.c. used today, the product is many times more effective, and serum reactions have been reduced to a minimum.

Note. 'Wellcome' Tetanus Antitoxin is now labelled in terms of the new 1950 *International Unit which is twice the strength of the old* (1928) *unit and is therefore equal to the U.S.A. Unit.*

'WELLCOME' TETANUS ANTITOXIN

Prepared at THE WELLCOME RESEARCH LABORATORIES, *Langley Court, Beckenham, England*
Supplied by BURROUGHS WELLCOME & CO. (THE WELLCOME FOUNDATION LTD.) LONDON

~~Public Health~~
Medical Officer – Nov 17

9½×7

2893/4/51

TETANUS ANTITOXIN

NEW INTERNATIONAL UNIT

From July 1st, 1950, a new international unit for Tetanus Antitoxin is in force. **The new unit is twice the strength of the old (1928) unit and is therefore equal to the U.S.A. unit.**

In order to prevent confusion, 'Wellcome' Tetanus Antitoxin is now labelled in terms of the International Unit (1950) with the equivalent potencies of the International Unit (1928) and the U.S.A. unit stated.

'WELLCOME' TETANUS ANTITOXIN

1500 International Units (1950) in 1 c.c.
[=3000 I.U. (1928)=1500 U.S.A. Units]

10 doses, each of 1500 International Units (1950), in 10 c.c.
[=3000 I.U. (1928)=1500 U.S.A. Units]

10,000 International Units (1950) in 2 c.c.
[=20,000 I.U. (1928)=10,000 U.S.A. Units]

50,000 International Units (1950) in 10 c.c.
[=100,000 I.U. (1928)=50,000 U.S.A. Units]

'WELLCOME' TETANUS ANTITOXIN

PREPARED AT THE WELLCOME RESEARCH LABORATORIES, LANGLEY COURT, BECKENHAM, ENGLAND

BURROUGHS WELLCOME & CO. (THE WELLCOME FOUNDATION LTD.) **LONDON**

Medical Officer ~~Public Health~~ - Oct 7

9¼ x 6¼

2630/50/9

J. D. 28.9.50.

'WELLCOME'
TETANUS TOXOID AND TETANUS ANTITOXIN

Experience during the recent World War has demonstrated the effectiveness and reliability of 'Wellcome' Tetanus Toxoid and Antitoxin. Two suitably spaced injections of Tetanus Toxoid will confer a high degree of active immunity, while Refined Tetanus Antitoxin — Globulins enables serum prophylaxis and therapy to be carried out with a minimum of reactions.

FOR ACTIVE IMMUNISATION	'WELLCOME' TETANUS TOXOID	Rubber-capped bottles of 1 c.c. and 5 c.c.
FOR PASSIVE IMMUNISATION	'WELLCOME' REFINED TETANUS ANTITOXIN — GLOBULINS	Ampoule of 3000 International Units (= 1500 U.S.A. Units) in 1 c.c. Rubber-stoppered bottle of 10 doses × 3000 International Units (= 1500 U.S.A. Units) in 10 c.c. (1 c.c. per dose).
FOR TREATMENT	'WELLCOME' REFINED TETANUS ANTITOXIN — GLOBULINS	Rubber-capped bottle of 20,000 International Units (= 10,000 U.S.A. Units) in 2·5 c.c. or less Rubber-capped bottle of 100,000 International Units (= 50,000 U.S.A. Units).

PREPARED AT THE WELLCOME PHYSIOLOGICAL RESEARCH LABORATORIES, LANGLEY COURT, BECKENHAM, ENGLAND

SUPPLIED BY
BURROUGHS WELLCOME & CO. *(THE WELLCOME FOUNDATION LTD.)* LONDON

A stage in the purification of Tetanus Antitoxin : Dialysis

The prophylaxis and treatment of Tetanus

'Wellcome' Tetanus Toxoid
Containers of 1 c.c. and 5 c.c.

'Wellcome' Refined Tetanus Antitoxin—Globulins

Ampoule of 3000 International Units (=1500 U.S.A. Units) in 1 c.c.
Rubber-stoppered bottle of 10 doses × 3000 International Units (=1500 U.S.A. Units) in 10 c.c.

Rubber-capped bottle of 20,000 International Units (=10,000 U.S.A. Units) in 2·5 c.c. or less.
Rubber-capped bottle of 100,000 International Units (=50,000 U.S.A. Units).

Experience during the second World War has demonstrated the effectiveness and reliability of 'Wellcome' Tetanus Toxoid and Antitoxin. Suitably spaced injections of Tetanus Toxoid will confer a high degree of active immunity, while Refined Tetanus Antitoxin—Globulins enables serum prophylaxis and therapy to be carried out with a minimum of reactions.

'Wellcome' Tetanus Toxoid and Tetanus Antitoxin

Prepared at The Wellcome Research Laboratories, Langley Court, Beckenham, Engl

BURROUGHS WELLCOME & CO. (THE WELLCOME FOUNDATION LTD.) LO

'WELLCOME'...

Concentrated Tetanus Antitoxin

(Veterinary)

'Wellcome' brand Concentrated Tetanus Antitoxin *(Veterinary)* is obtained from horses hyper-immunised against tetanus toxin. Each c.c. contains 500 International Units (1950). It was originally used primarily for the prophylaxis and treatment of tetanus in the horse, but in recent years it has been used increasingly in other species of animals, particularly on farms where tetanus is apt to occur following simple operations. Tetanus Antitoxin is mainly administered prophylactically ; it is used in horses before operation or following accidental wounds, in cows after calving, in sheep following shearing, castration, docking or ear marking, and in calves and pigs following castration. It is of value in treatment, particularly if injected very early in the course of the disease.

ADMINISTRATION

For prophylaxis in the horse, before operation or soon after injury, at least 1500 Units (3 c.c.) should be injected. A dose of 1500 Units of tetanus antitoxin has, on very rare occasions failed to protect and many practitioners prefer to give larger doses, even up to 5000 Units. In the treatment of the affected horse, large doses of the antitoxin should be injected as soon as possible. In the first instance at least 10,000 Units (20 c.c.) should be administered intravenously and another 10,000 Units (20 c.c.) subcutaneously. These injections should be followed by further daily doses of at least 5000 Units (10 c.c.) subcutaneously until definite improvement has set in.

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Concentrated Tetanus Antitoxin (*veterinary*)

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In the cow, prophylaxis and treatment should be carried out on similar lines to those recommended for the horse. In sheep, calves and pigs, the prophylactic dose is 500 Units (1 c.c.). On the rare occasions in which treatment is considered advisable, proportionally larger doses should be administered as in the case of the horse.

'WELLCOME' brand **Concentrated Tetanus Antitoxin** *(Veterinary)*, 500 International Units (1950) per c.c. is issued in bottles of :—

1500 International Units (1950) in **3** c.c.
5000 International Units (1950) in **10** c.c.
25,000 International Units (1950) in **50** c.c.

Veterinary products are thoroughly tested before issue. As their subsequent handling and administration are not controlled by the preparers or suppliers, no responsibility following their use can be accepted. The products are issued subject to this condition, and the use of them is deemed to be an acceptance of it.
Keep in a cool dark place. Storage below freezing point is harmful. The optimum temperature is between 2° and 4° C. When kept in ordinary unheated rooms (15° C.) serological products deteriorate slowly. In the case of antitoxic sera, this is allowed for by the excess put into each phial.
To facilitate reference, the series number given on the label of each container should be noted.

G.B. LICENCE No. 1 ; EIRE IMPORT LICENCE No. 10

Prepared at the Wellcome Research Laboratories
Langley Court, Beckenham, England

BURROUGHS WELLCOME & CO.
(The Wellcome Foundation Ltd.)
LONDON

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In the horse the usual prophylactic dose before operation or soon after injury is 1500 Units (3 c.c.), although some practitioners prefer to give larger doses, even up to 5000 Units (10 c.c.). In the treatment of the affected horse, large doses of the antitoxin should be injected as soon as possible. In the first instance at least 10,000 Units (20 c.c.) should be administered intravenously and another 10,000 Units (20 c.c.) subcutaneously. These injections should be followed by further daily doses of at least 5000 Units (10 c.c.) subcutaneously until definite improvement has set in.

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