

# Azienda Ospedaliera Universitaria di Ferrara

## U.O. Complessa di Medicina Interna Ospedaliera



### **DONAZIONE DI SANGUE: *LA SALVAGUARDIA DEL DONATORE E DEL RICEVENTE***

*Sabato 06 Ottobre 2012*

**“La donazione di sangue non aumenta il rischio di  
insorgenza di malattie ”**

*Massimo Gallerani*

## LA DONAZIONE PUÒ COMPORTARE DEI RISCHI PER IL DONATORE ?

Grazie all'accurata selezione per un adulto sano la donazione di sangue non comporta alcun rischio.

Esistono precise disposizioni che regolano la raccolta del sangue:

- la quantità del sangue che viene prelevata mediamente ad ogni prelievo è minima ed è stabilita in modo da non compromettere la salute del donatore.
- tra un'operazione e l'altra si deve attendere un periodo di almeno 60 giorni.
- la frequenza delle donazioni è regolata in modo da non compromettere la salute del donatore. In Italia, la frequenza delle donazioni è di una volta al mese e a 2 anni.
- i controlli e le visite periodiche effettuate a ciascun donatore prima di ogni donazione sono uno strumento di medicina preventiva, a tutela dello stato di salute generale del donatore, inoltre il decorso della donazione viene sempre sorvegliata da personale medico.

**La tutela della salute e della sicurezza sia del donatore che del ricevente sono fondamentali.**

# Promuovere la salute del donatore relazioni e rapporti affettivi

Florio Ghinelli

U.O. Malattie Infettive

AVIS provinciale di Ferrara

*Bologna, 27 novembre 2004*

## Promuovere la salute del donatore

Bologna 27 novembre 2004

Pietro Fagiani

**Casale G, Bignamini M, de Nicola P.**

**Does blood donation prolong life  
expectancy?**

**Vox Sang. 1983;45(5):398-9.**

**Casale G, Bignamini M.**

**Study of survival in 332 blood  
donors and 399 non-donors.**

**Riv. Emoter. Immunoematol.  
1983;30(3):304-11.**

# Possibile associazione della riduzione di eventi cardiovascolari con la donazione di sangue

*Table 2 Cardiovascular events and procedures*

<i>Event</i>	<i>Donors (n = 655)</i>	<i>Non-donors (n = 3200)</i>	<i>P value</i>
Angina	24 (8.66%)	253 (17.64%)	< 0.001
Myocardial infarction	12 (9.45%)	115 (17.25%)	0.022
PTCA	5 (5.68%)	83 (17.26%)	0.002
CABG	6 (8.11%)	68 (17.16%)	0.022
Claudication/bypass/ angioplasty/endarterectomy	29 (11.24%)	229 (17.40%)	0.010
Stroke	5 (5.56%)	85 (17.26%)	0.001
Nitroglycerin use	7 (5.79%)	114 (17.35%)	< 0.001

Subjects are classified by their single most profound vascular event: myocardial infarction > stroke > CABG > PTCA > angina > claudication > nitroglycerin.

CABG, coronary artery bypass graft; PTCA, percutaneous transluminal coronary angioplasty.



Donat

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**Lo studio sembra suggerire che la frequente riduzione dei livelli ematici correlati con la donazione in soggetti volontari sani si associ ad una riduzione del rischio di infarto miocardico**

and an other predictive coronary disease risk factors, blood donors had a 60% reduced risk (relative hazard = 0.12, 95% confidence interval 0.02–0.86,  $p = 0.035$ ) of acute myocardial infarction, compared with non-blood donors. These findings suggest that frequent blood loss through voluntary blood donations may be associated with a reduced risk of acute myocardial infarction in middle-aged men. *Am J Epidemiol* 1998;148:445–51.

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**Carter C, McGee D, reed D, Yano  
K, Stemmermann G.**

Hematocrit and the risk of coronary  
heart disease:  
the Honolulu Heart Program.

**Am Heart J 1983; 105(4):674-9.**

# Blood Donations and Risk of Coronary Heart

## Donazioni di sangue e rischio coronarico

*Background*—In experimental animals, iron overload appears to promote atherosclerosis and ischemic myocardial damage, but the results of epidemiological studies that relate iron stores to risk of coronary heart disease (CHD) have been inconsistent.

*Methods and Results*—We prospectively studied blood donations, which effectively reduce body iron stores, in relation

**Lo studio non dimostra l'ipotesi che la  
riduzione dei livelli di ferro si associ ad  
una riduzione del rischio coronarico**

or myocardial infarction in analyses restricted to men with hypercholesterolemia or those who never used antioxidant supplements or aspirin.

*Conclusions*—The study results do not support the hypothesis that reduced body iron stores lower CHD risk. (*Circulation*. 2001;103:52-57.)

# The impact of different intensities of regular donor plasmapheresis on humoral and cellular immunity, red cell and iron metabolism, and cardiovascular risk markers

B. Tran-Mi,<sup>1</sup> H. Storch,<sup>2</sup> K. Seidel,<sup>3</sup> T. Schulzki,<sup>1</sup> H. Haubelt,<sup>1</sup> C. Anders,<sup>1</sup> D. Nagel,<sup>4</sup> K. E. Siegler,<sup>5</sup> A. Vogt,<sup>1</sup> D. Seiler<sup>4</sup> & P. Hellstern<sup>1</sup>

**Background and Objectives** Major studies are still lacking on the impact of differing intensities of long-term donor plasmapheresis, not only on total serum protein, albumin and immunoglobulin G (IgG) but also on humoral and cellular immunity, red cell and

**La regolare plasmaferesi non si associa a alterazione del sistema immunitario, né ad un aumento del rischio cardiovascolare**

not at increased cardiovascular risk.

**Conclusions** Regular donor plasmapheresis of up to 45 l of plasma per year appears to be as safe as more moderate plasmapheresis programmes, with respect to the parameters analysed in this study. Individuals donating under these conditions did not develop impaired humoral and cellular immunity, iron store depletion, or increased cardiovascular risk with regard to established biochemical risk markers. Prospective studies are required to determine more exactly than in retrospective analyses the reasons why donors withdraw from plasmapheresis programmes.

## **Donation Frequency, Iron Loss, and Risk of Cancer Among Blood Donors**

Gustaf Edgren, Marie Reilly, Henrik Hjalgrim, Trung Nam Tran, Klaus Rostgaard, Johanna Adami,

**La donazione abituale non è associata ad un aumento del rischio di sviluppare neoplasie.**

**Sono necessari studi per escludere un'associazione tra donazione di sangue e aumentato rischio di linfomi**

## Blood Donations, Iron Stores, and Risk of Parkinson's Disease

**Questo studio non supporta l'ipotesi che la riduzione sistemica delle riserve di ferro si associa ad una riduzione del rischio d'insorgenza di Malattia di Parkinson**

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Professionals Follow-Up Study, a large cohort investigation of U.S. men. Our hypothesis was that blood donation reduces the risk of PD by lowering systemic iron stores. Although the number of blood donations was inversely related to the ferritin levels in a subsample of the study population, no association

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support the hypothesis that reduced systemic iron stores lower the risk of PD. © 2006 Movement Disorder Society

**Key words:** iron; blood donation; Parkinson's disease; risk cohort studies

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**Dipartimento  
Medico**

**AVIS**

**Progetto aspettativa di vita  
dei donatori di sangue**

**Servizio  
Trasfusionale**

**Servizio  
Informatico  
A.U.S.L - Fe**

## **IPOTESI**

- **Aumento dell'aspettativa di vita per i donatori**
- **Nessuna differenza nell'aspettativa di vita tra donatori e non donatori**
- **Aumentato rischio di alcune malattie nei donatori di sangue**

# **SCHEDA PROGETTO PER L'IMPIEGO DI VOLONTARI IN SERVIZIO CIVILE IN ITALIA 2009**

## **ENTE**

### *1) Ente proponente il progetto:*

Azienda Ospedaliera Universitaria di Ferrara (NZ02325 – prima sezione albo regionale – classe quarta) Corso Giovecca, 203 – Ferrara - Tel. 0532/236111 – [www.ospfe.it](http://www.ospfe.it)  
L'Ospedale di Ferrara, struttura di integrazione tra Servizio Sanitario Nazionale e Università, cura e assiste, educa e produce cultura professionale, contribuisce allo sviluppo delle conoscenze mediche attraverso la ricerca scientifica. L'Azienda Ospedaliero-Universitaria di Ferrara ha l'obiettivo di erogare ai cittadini prestazioni sanitarie che siano: efficaci, appropriate, sicure, accettabili, efficienti, accessibili, continuative. Nei confronti della comunità l'Azienda si impegna a lavorare osservando i seguenti principi: eguaglianza, imparzialità, partecipazione e trasparenza.

## **CARATTERISTICHE PROGETTO**

### *4) Titolo del progetto:*

Donatore di sangue: una ricchezza per la società o salvaguardia per l'individuo?

**Ottobre 2008**

**Archivio storico AVIS**



**Banca dati AVIS**

**Informatizzata**

- **giugno 2009: il progetto di Servizio Civile viene accettato**
- **viene quindi bandito il concorso di partecipazione**
- **ottobre 2009: espletamento del concorso**
- **7 gennaio 2010: inizio del servizio**



**Chiara Gallerani**



**Agata Fogli**



**$\approx 35000$  schede**

**Relative a**

**$\approx 23500$  donatori**



**Richiesta al comitato etico di eseguire lo studio**

**Richiesta al comitato aziendale per la privacy**

**Settembre 2010**

**Contatto con il CED azienda U.S.L. di  
Ferrara per dati relativi ai ricoveri avvenuti  
nella nostra provincia negli ultimi 5-10 anni**

## MATERIALS AND METHODS

We considered **all subjects included in the database of AVIS** Province of Ferrara, but the analysis included only residents who had donated at least once. Non-residents were excluded.

For each BD from the master archive of the province of Ferrara, using a special computer program, **four non-donors controls** with same sex, country, and date of birth (initially choosing the same year, month and as far as possible up to the same day) were selected.

## **MATERIALS AND METHODS**

**From the electronic databases of Emilia Romagna Region, all hospitalizations of donors and "non-donors" from January 2005 to December 2010 were extracted.**

**Regional electronic database track all Discharge Hospital Sheets (DHS) of patients admitted to hospitals.**

**The DHS lists: name and surname, gender, date of birth, date and hour of hospital admission and discharge, department of admission and discharge, vital status at discharge, length of stay, primary and up to 15 secondary discharge diagnoses, and the most important diagnostic procedures, based on the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM).**

# PRINCIPAL CHARACTERISTICS OF SAMPLE

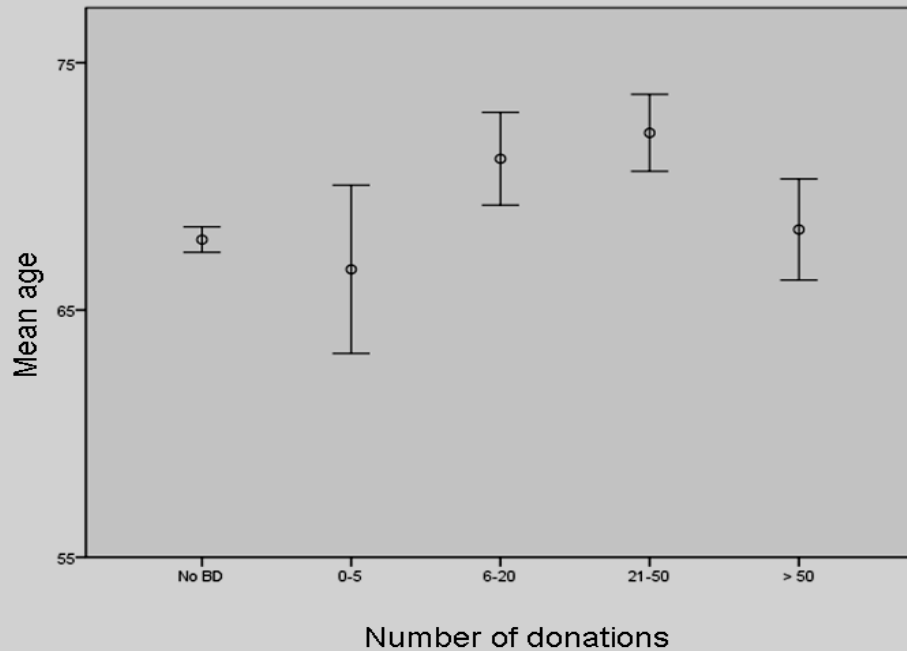
	All	Blood donors	Non-blood donors	p
<b>n° subjects</b>	<b>55,000 (100%)</b>	<b>11,862 (21.5%)</b>	<b>43,138 (78.5)</b>	
<b>n° admission</b>	<b>124,825 (100%)</b>	<b>26,140 (21.2%)</b>	<b>98,685 ( 78.8%)</b>	
<b>Males (n %)</b>	<b>82,533 (66.1%)</b>	<b>17,332 (66,3%)</b>	<b>65,201 (66.1%)</b>	<b>.481</b>

# PRINCIPAL CHARACTERISTICS OF SAMPLE

	All	Blood donors	Non-blood donors	p
n° admission	124,825 (100%)	26,140 (21.2%)	98,685 (78.8%)	
Age at hospital admission (mean/SD)	53 ± 16.6	53.6 ± 16.2	52.8 ± 16.7	< .001
Number of in-hospital admissions (mean/SEM)	2.8 ± 0.009	2.57 ± 0.016	2.83 ± 0.011	< .001
Length of stay (mean/SEM)	19.2 ± 0.145	16.9 ± 0.286	19.8 ± 0.17	< .001
Number of diagnoses (mean/SEM)	2.20 ± 0.004	2.12 ± 0,009	2.23 ± 0.005	< .001
CCIa (mean/SEM)	1.4 ± 0.005	1.28 ± 0.011	1.48 ± 0.006	< .001

CCIa = Charlson index modified for use with ICD-9-CM administrative databases and adjusted by age

(a)



BD subgroups for years of donations			
0	Non-blood donors (n = 2189)	67 ± 12	^ F = 9.82 P < 0.001
1	<b>0-5 Donations (n = 76)</b>	67 ± 15	
2	<b>6-20 Donations (n = 155)</b>	71 ± 12	
3	<b>21-50 Donations (n = 153)</b>	72 ± 10	
4	<b>&gt;50 Donations (n = 63)</b>	68 ± 8	

^ analysis of variance comparing mean age of NBDs and subgroups of BDs

(b)



BD subgroups for years of donations			
0	Non-blood donors (n = 2189)	67 ± 12	^ F = 10.24 < 0.001
1	1 m - < 4y 11 m (n = 93)	70 ± 14	
2	5 y - 9 y 11 m (n = 83)	72 ± 13	
3	10 y - 19y 11m (n = 115)	71 ± 10	
4	≥ 21 y (n = 130)	71 ± 8	

^ analysis of variance comparing mean age of NBDs and subgroups of BDs

	All	Blood donors	Non-blood donors	p
<b>Rate of mortality</b>	<b>2636 (2.1%)</b>	<b>447 (1.7%)</b>	<b>2189 (2,2%)</b>	<b>&lt; .001</b>
<b>Age of mortality (mean/SD)</b>	<b>(n = 2636) 68.3 ± 12.2</b>	<b>(n = 447, 3.77%) 70.3 ± 11.5</b>	<b>(n = 2189, 5.07%) 67.8 ± 12.3</b>	<b>&lt; .001</b>

## MAIN DRG OF IN-HOSPITAL ADMISSIONS OF BLOOD DONORS AND NON BLOOD DONORS

DRG	DRG Description	BLOOD DONORS			NON-B DONORS			p
		rank	n	%	rank	n	%	
373	VAGINAL DELIVERY W/O COMPLICATING DIAGNOSES	1	807	3.1	1	3077	3.1	.814
410	CHEMOTHERAPY	2	800	3.1	2	2853	2.9	.154
162	INGUINAL & FEMORAL HERNIA PROCEDURES AGE >17 W/O CC	4	650	2.5	3	2333	2.4	.258
127	HEART FAILURE & SHOCK	11	339	1.3	11	1251	1.3	.731
364	D&C, CONIZATION EXCEPT FOR MALIGNANCY	12	325	1.2	12	1204	1.2	.785
311	TRANSURETHRAL PROCEDURES W/O CC	14	302	1.2	16	1003	1.0	.054
408	MYELOPROLIF DISORD OR POOR DIFF NEOPL W OTHER O.R. PROC	21	221	0.8	26	752	0.8	.185
40	EXTRAOCULAR PROCEDURES EXCEPT ORBIT AGE >17	26	202	0.8	33	658	0.7	.072
270	OTHER SKIN, SUBCUT TISS & BREAST PROCEDURE W/O CC	27	199	0.8	32	674	0.7	.191
131	PERIPHERAL VASCULAR DISORDERS W/O CC	29	194	0.7	34	648	0.7	.144
494	LAPAROSCOPIC CHOLECYSTECTOMY W/O CDE W/O CC	30	189	0.7	30	694	0.7	.766
139	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W/O CC	31	182	0.7	27	733	0.7	.457
87	PULMONARY EDEMA & RESPIRATORY FAILURE	33	161	0.6	29	703	0.7	.103
203	MALIGNANCY OF HEPATOBILIARY SYSTEM OR PANCREAS	35	157	0.6	31	680	0.7	.130

## MAIN DRG OF IN-HOSPITAL ADMISSIONS OF BLOOD DONORS AND NON BLOOD DONORS

DRG	DRG Description	BLOOD DONORS			NON-B DONORS			p
		rank	n	%	rank	n	%	
485	KNEE PROCEDURES W PDX OF INFECTION W MCC	3	749	2.9	4	1904	1.9	< .001
229	HAND OR WRIST PROC, EXCEPT MAJOR JOINT PROC, W/O CC	5	503	1.9	10	1312	1.3	< .001
119	VEIN LIGATION & STRIPPING	6	498	1.9	6	1472	1.5	< .001
158	ANAL & STOMAL PROCEDURES W/O CC	7	468	1.8	8	1448	1.5	< .001
359	UTERINE & ADNEXA PROC FOR CA IN SITU & NONMALIG W/O CC	8	446	1.7	7	1450	1.5	< .001
55	MISCELLANEOUS EAR, NOSE & THROAT PROCEDURES	10	356	1.4	17	1002	1.0	< .001
266	SKIN GRAFT &/OR DEBRID EXC FOR SKN ULCER, CELLUL W/O CC	13	323	1.2	15	1016	1.0	< .004
227	SOFT TISSUE PROCEDURES W/O CC	15	298	1.1	24	772	0.8	< .001
323	URINARY STONES W CC, &/OR ESW LITHOTRIPSY	16	292	1.1	14	1092	1.1	< .001
231	LOCAL EXCISION & REMOVAL OF INT FIX DEVICES EXC HIP & FEMUR	18	275	1.1	21	885	0.9	< .022
500	BACK AND NECK PROCEDURES EXCEPT SPINAL FUSION WITHOUT CC/MCC	19	259	1.0	28	723	0.7	< .001
209	MAJOR JOINT & LIMB REATTACH PROC OF LOW EXT, EXC HIP, EXC COMP	20	222	0.8	45	534	0.5	< .001
225	FOOT PROCEDURES	23	218	0.8	42	567	0.6	< .001
360	VAGINA, CERVIX, & VULVA PROCEDURES	25	206	0.8	39	587	0.6	< .001

## MAIN DRG OF IN-HOSPITAL ADMISSIONS OF BLOOD DONORS AND NON BLOOD DONORS

DRG	DRG Description	BLOOD DONORS			NON-BLOOD DONORS			p
		rank	n	%	rank	n	%	
381	ABORTION W D&C, ASPIRATION CURETTAGE OR HYSTEROTOMY	9	377	1.4	5	1655	1.7	< .001
82	RESPIRATORY NEOPLASMS	22	219	0.8	18	1000	1.0	< .011
183	ESOPHAGITIS, GASTROENT & MISC DIGEST DISORD AGE>17 W/O CC	24	213	0.8	19	993	1.0	< .005
14	STROKE WITH INFARCT	28	197	0.8	22	875	0.9	<0.042
316	RENAL FAILURE	32	166	0.6	20	912	0.9	< .001
430	PSYCHOSES	34	160	0.6	13	1118	1.1	< .001

**LOGISTIC REGRESSION ANALYSIS FOR THE RISK OF DISEASE IN BDS. IN THE MODEL WERE INCLUDED AGE, GENDER AND NUMBER OF ADMISSIONS. NBDS ARE THE REFERENCE GROUP.**

ICD-9 index	DONORS	NON-DONORS	P	OR	C.I. 95%	
					Inferior	Superior
INFECTIOUS DISEASES (1-118)	107 (0.9%)	483 (1.1%)	.042	0.804	0.651	0.992
PARASITIC DISEASES (120-139)	14 (0.1%)	92 (0.2%)	.039	0.553	0.315	0.971
NEOPLASMS (140-239)	1485 (12.5%)	5389 (12.5%)	.273	0.980	0.944	1.016
DISEASES OF THE CIRCULATORY SYSTEM (390-459)	2780 (21.3%)	9082 (21.7%)	.091	0.957	0.909	10.007
DISEASES OF THE RESPIRATORY SYSTEM (460-519)	887 (20.6%)	10975 (21.7%)	.082	0.934	0.865	10.009
DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE (680-709)	343 (21.1%)	11519 (21.6%)	.728	0.979	0.867	1.105
SYMPTOMS, SIGNS, AND ILL-DEFINED CONDITIONS (780-789)	822 (20.6%)	11040 (21.6%)	.115	0.938	0.866	10.016
INJURY AND POISONING (800-999)	1147 (21.2%)	10715 (21.6%)	.621	0.983	0.918	10.053

## LOGISTIC REGRESSION ANALYSIS FOR THE RISK OF DISEASE IN BDS. IN THE MODEL WERE INCLUDED AGE, GENDER AND NUMBER OF ADMISSIONS.

ICD-9 index	DONORS	NON-DONORS	p	OR	C.I. 95%	
					Inferior	Superior
<b>ENDOCRINE, NUTRITIONAL-METABOLIC DIS., AND IMMUNITY DISORDERS (240-279)</b>	<b>952 (8.0%)</b>	<b>3758 (8.7%)</b>	<b>.007</b>	<b>0.902</b>	<b>0.836</b>	<b>0.972</b>
Nutritional deficiency (260-269)	26 (0.2%)	186 (0.4%)	.001	0.498	0.330	0.752
<b>DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS (280-289)</b>	<b>267 (2.3%)</b>	<b>1295 (3.0%)</b>	<b>.000</b>	<b>0.737</b>	<b>0.645</b>	<b>0.843</b>
Blood loss anemias (280.0)	117 (1.0%)	602 (1.4%)	.001	0.707	0.580	0.863
Deficiency anemias (280.1-281.9, 285.9)	209 (1.8%)	967 (2.2%)	.001	0.769	0.661	0.895
<b>MENTAL DISORDERS (290-319)</b>	<b>276 (2.3%)</b>	<b>1706 (4.0%)</b>	<b>.000</b>	<b>0.584</b>	<b>0.542</b>	<b>0.628</b>
Drug abuse (292.0, 292.82-292.89, 292.9, 304.00-304.93, 305.20-305.93)	10 (0.1%)	141 (0.3%)	.000	0.261	0.137	0.496
Alcohol abuse (291.1, 291.2, 291.5, 291.8, 291.9, 303.90-303.93, 305.00, 304.00-304.93)	47 (0.4%)	360 (0.8%)	.000	0.474	0.350	0.643
Psychosis (290-299)	104 (0.9%)	616 (1.4%)	.000	0.655	0.531	0.809
Depression (300.4, 301.12, 309.0, 309.1, 311)	131 (1.1%)	755 (1.8%)	.000	0.658	0.545	0.794
<b>DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS (320-389)</b>	<b>798 (6.7%)</b>	<b>3198 (7.4%)</b>	<b>.006</b>	<b>0.894</b>	<b>0.824</b>	<b>0.969</b>
<b>CEREBROVASCULAR DISEASE (430-438)</b>	<b>359 (19.1%)</b>	<b>11503 (21.7%)</b>	<b>.002</b>	<b>0.831</b>	<b>0.738</b>	<b>0.936</b>
<b>CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ALLIED CONDITIONS (490-496)</b>	<b>177 (16.5%)</b>	<b>11685 (21.7%)</b>	<b>.000</b>	<b>0.699</b>	<b>0.594</b>	<b>0.823</b>
<b>DISEASES OF THE DIGESTIVE SYSTEM (520-579)</b>	<b>1691 (20.0%)</b>	<b>10171 (21.9%)</b>	<b>.000</b>	<b>0.887</b>	<b>0.837</b>	<b>0.939</b>
Liver diseases (570-573)	264 (2.2%)	1347 (3.1%)	.000	0.702	0.615	0.803
<b>DISEASES OF THE GENITOURINARY SYSTEM (580-629)</b>	<b>102 (17.1%)</b>	<b>11760 (21.6%)</b>	<b>.005</b>	<b>0.734</b>	<b>0.592</b>	<b>0.911</b>
Renal failure (585)	199 (1.7%)	864 (2.0%)	.007	0.705	0.547	0.910
Nephritis nephrosis (580-589)	286 (2.4%)	1219 (2.8%)	.005	0.827	0.725	0.944
<b>COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM (631-679)</b>	<b>1062 (18.5%)</b>	<b>10800 (21.9%)</b>	<b>.000</b>	<b>0.804</b>	<b>0.746</b>	<b>0.867</b>
Collagen and vascular diseases (701.0, 710.0-710.9, 714.0-714.9, 720.0-720.9, 725)	76 (0.6%)	392 (0.9%)	.004	0.698	0.545	0.893

**LOGISTIC REGRESSION ANALYSIS FOR THE RISK OF DISEASE IN BDS. IN THE MODEL WERE INCLUDED AGE, GENDER AND NUMBER OF ADMISSIONS. NBDS ARE THE REFERENCE GROUP.**

ICD-9 index	DONORS	NON-DONORS			C.I. 95%	
			p	OR	Inferior	Superior
<i>Varicose vein of lower extremity (454)</i>	374 (3.2%)	1146 (2.7%)	.005	1.188	1.055	1.337
<i>DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE</i>	1897 (26.4%)	9965 (20.8%)	.000	1.363	1.287	1.442

**LOGISTIC REGRESSION ANALYSIS FOR RISK OF IN-HOSPITAL DEATH IN BD SUBGROUPS IN RELATION TO THE NUMBER AND TIME OF DONATIONS. IN THE MODEL, AGE, GENDER AND NUMBER OF ADMISSIONS ARE INCLUDED.**

**Number of donations**

Subgroups	% of patients	p	O.R.	95% CI for EXP(B)	
				Inferior	Superior
<i>Non-blood donors</i>	2.2	-	-	-	-
<i>1-5 Donations</i>	1.0	0.000	0.634	0.503	0.800
<i>6-20 Donations</i>	1.8	0.022	0.823	0.697	0.972
<i>21-50 Donations</i>	2.4	0.017	0.816	0.690	0.965
<i>&gt;50 Donations</i>	1.8	0.000	0.616	0.478	0.794

**Time of donations**

<i>Non-blood donors</i>	2.2	-	-	-	-
<i>1 m - &lt; 4y 11 m</i>	1.3	0.003	0.723	0.585	0.893
<i>5 y - 9 y 11 m</i>	1.8	0.146	0.847	0.677	1.060
<i>10 y - 19y 11m</i>	1.9	0.003	0.748	0.618	0.905
<i>≥ 21 y</i>	2.3	0.001	0.733	0.612	0.877

**LOGISTIC REGRESSION ANALYSIS FOR RISK OF NEOPLASMS (ICD-9 140-239) IN BD SUBGROUPS IN RELATION TO THE NUMBER AND TIME OF DONATIONS. IN THE MODEL, AGE, GENDER AND NUMBER OF ADMISSIONS ARE INCLUDED.**

**Number of donations**

Subgroups	% of patients	p	O.R.	95% CI for EXP(B)	
				Inferior	Superior
<i>Non-blood donors</i>	18.0%	-	-	-	-
<i>1-5 Donations</i>	13.8%	0.989	0.999	0.894	1.117
<i>6-20 Donations</i>	17.3%	0.859	1.009	0.912	1.117
<i>21-50 Donations</i>	19.7%	0.314	0.943	0.840	1.057
<i>&gt;50 Donations</i>	22.8%	0.437	1.057	0.919	1.214

**Time of donations**

<i>Non-blood donors</i>	18.0%	-	-	-	-
<i>1 m - &lt; 4y 11 m</i>	16.1%	0.102	1.096	0.982	1.223
<i>5 y - 9 y 11 m</i>	16.7%	0.040	0.860	0.744	0.993
<i>10 y – 19y 11m</i>	18.8%	0.527	10.039	0.924	1.168
<i>≥ 21 y</i>	21.3%	0.673	0.975	0.869	1.095

## **LIMITS OF THE STUDY**

**The condition of BDs involves a preliminary screening excluding subjects with genetic or juvenile onset disorders, e.g., diabetes mellitus type 1.**

**Lack of information about possibly important confounding factors, such as smoking, alcohol consumption, diet, physical activity, anthropometric measures, and occupational exposures.**

**Although the restriction of our study with comparisons across strata that were defined by NBDs and donation activity should have limited the scope for important confounding lifestyle factors, the analyses among the control subjects suggested an association between donation frequency and alcohol- and tobacco-related diseases. However, we cannot directly quantify the impact of the suspected confounding.**

# CONCLUSIONI

**Questo studio dimostra che la donazione di sangue non è un fattore di rischio per l'insorgenza di patologie : in particolare non vi è un aumento di leucemie linfomi o neoplasie.**

**Non vi è un aumento di frequenza di malattie gravi associate al numero delle donazioni o a numero di anni di donazione**

**La condizione di donatore abituale è associata ad un aumento dell'aspettativa di vita di circa 3 anni rispetto al non donatore.**



Un **AM**  **RE**   
che CONTINUA

**AVIS**  
Provinciale Ferrara

**Grazie  
dell'attenzione**