

Canine Health Information Center: Practical Applications for Breeders

Eddie Dziuk

Orthopedic Foundation for Animals, Columbia, MO

OVERVIEW OF THE ISSUE

CHIC--The Canine Health Information Center

The Canine Health Information Center, also known as CHIC, is a centralized canine health database jointly sponsored by the AKC/Canine Health Foundation (AKC/CHF) and the Orthopedic Foundation for Animals (OFA). The program was originally conceptualized by the AKC Delegate Parent Club and Canine Health Committees. The AKC CHF and OFA took on the project, and implemented it in the Fall of 2001 with eight pilot breeds participating. Today, nearly one third of the AKC Parent Clubs have joined CHIC, and nearly 20,000 dogs have met the individual breed health testing requirements and been assigned CHIC numbers.

The CHIC Mission Statement is quite simply *"To provide a source of health information for owners, breeders, and scientists, that will assist in breeding healthy dogs."* The specific program goals are:

- To work with parent clubs in the identification of health issues for which a central information system should be established.
- To establish and maintain a central health information system in a manner that will support research into canine disease and provide health information to owners and breeders.
- To establish scientifically valid diagnostic criteria for the acceptance of information into the database.
- To base the availability of information on individually identified dogs at the consent of the owner.

The CHIC database is a tool that collects health information on individual animals from multiple sources. As more phenotypic and genetic screening tests become available and breeders make greater use of these tests, it is important that a database exists to capture this data. CHIC satisfies this need by functioning as a centralized pool of data. CHIC is about encouraging testing and health awareness and recording the results. It is not necessarily about 'normalcy' nor should it be misconstrued as an award program for normal dogs. Dogs with abnormal results are eligible for CHIC numbers as long as their results are in the public domain so that the breeders can benefit from the information in making more informed breeding decisions.

Core to the CHIC philosophy is the realization that each breed has different health concerns. Not all diseases have known modes of inheritance, nor do all diseases have screening tests. Some screening tests are based on phenotypic evaluation, others on genetic testing. With all these variables, a key element of CHIC is to customize or tailor the CHIC requirements to the needs of each breed. These unique requirements are established through input from the parent club prior to the breed's entry into the CHIC program. Breed specific requirements typically consist of the inherited diseases that are of the greatest concern and for which some screening test is available. Each parent club also drives specific screening protocols. As an example, one parent club may allow cardiac exams to be performed by a general practitioner. Another parent club may require the exam to be performed by a board certified cardiologist. A club may also use the CHIC program to maintain information on other health issues for anecdotal purposes. Later, as screening tests become available, the disease may be added to the breed specific requirements.

Regardless of breed, each dog must be permanently identified in order to have test results included in CHIC. permanent identification may be in the form of microchip, or tattoo.

CHIC operates an informed consent database. All information regarding test results remains confidential unless the owner specifically authorizes release of the information into the public domain. Owners are encouraged to release all test results realizing it is in the ultimate health interests of the breed and the information greatly increases the depth and breadth of any resulting pedigree analysis. For those not quite ready to accept open sharing of information, there is still value in submitting their results. All test information entered into the database is available in aggregate for research and statistical reporting purposes, but does not disclose identification of individual dogs. This results in improved information on the prevalence of the disease, as well as information regarding progress in reducing the incidence of the disease.

A CHIC number is issued when test results are entered into the database satisfying each breed specific requirement, and when the owner of the dog has opted to release the results into the public domain. The CHIC number by itself does not imply normal test results, nor should it be interpreted as a 'stamp of approval' for breeding. The CHIC number only indicates that all the required breed specific tests were performed and the results made publicly available.

When a CHIC number is issued, a CHIC report is generated. The CHIC report is a consolidated listing of the tests performed, the age of the dog when the tests were performed, and the corresponding test results. As new results are recorded, updated CHIC reports reflecting the additional information are generated. For example, if a breed requires annual CERF examinations, an updated CHIC report will be generated every time updated CERF results are entered.

Figure 1. - A sample CHIC report.

CANINE HEALTH INFORMATION CENTER			
FAERA'S STARLIGHT, CH <i>Registered Name</i>	SN70962301 <i>Registration no.</i>		
GOLDEN RETRIEVER <i>Breed</i>	M <i>Sex</i>	11/22/1999 <i>Date of Birth</i>	
039 848 374 <i>State/Province</i>	5/24/2004 <i>Date of Report</i>		
CHIC#: 7799			
REQUIRED TESTS			
CARDIAC	OFA	GR-CA3271/12M/C-PI	12/11/2000
ELBOW	OFA	GR-EL5179M24-PI	11/26/2001
HIPS	OFA	GR-74002E26M-PI	2/8/2002
EYES	CERF	GR-22027 (00,0 1,01,02,03,03)	11/5/2003
CERF examinations are valid only for 12 months from the date of the examination, until the age of 96 months, at which time this certificate may be considered permanent.			
OWNER	<i>M.A. Kelleys</i> S.G. Kelleys, DVM, MS, DACVP Chief of Veterinary Service	<i>DD DeLoe</i> D.D. DeLoe Executive Director	
RHONDA HOVAN PO BOX 1110 BATH, OH 44210			
www.caninehealthinfo.org			

Once included in the CHIC program, the breed specific requirements are dynamic. As health priorities within a breed change, or as new screening tests become available, the breed specific requirements can be modified to reflect the current environment.

Health testing by itself is only the first step in attempting to reduce the incidence of genetic disease in our companion animals. It is important to take the next step and record the results in genetic health registries so that the data is preserved and others may benefit from it. Finally, the website brings things full circle by making the information easily accessible to the public via the internet. The CHIC website is located at www.caninehealthinfo.org. The website contains basic information on CHIC such as its mission and goals, and maintains a listing of the participating breeds and approved breed specific test protocols. The CHIC website also provides a search engine to locate dogs that have been issued CHIC numbers, their test dates, and the results of their tests. The website has been designed to seamlessly integrate with the existing OFA website.

The OFA and CHIC search engines allow queries to be very broad or very specific. Search criteria include registration numbers, registered names (including full name, first part of name, any part of name), breed, sex, birthdate (or range), specific disease registry, specific diagnostic rating, and report date (or range). Any combination of these search criteria can be specified resulting in a variety of potential matches.

Figure 2.

Screen Shot from the OFA website displaying the search criteria screen. In this example, the kennel name "Faera" was entered as the search criteria.

Figure 3.

The screenshot shows the OFA Search Results page. At the top, there is a search bar with the text "OFA Search of A Records by Registration Number, OFA Number, or Name" and a search button. Below the search bar, the title "OFA Search Results" is displayed. A message states "Refine this search 270 entries match your selection". Below this, there is a table with columns: NAME, REGISTRATION, BREED, SEX, BIRTH DATE, and OFA #. The table lists various dogs with names starting with "FAERA".

NAME	REGISTRATION	BREED	SEX	BIRTH DATE	OFA #
FAERA BLOODLINE SUGAR PRINCE	SN0772001	GOLDEN RETRIEVER	F	Jun 17 1999	24 UK-4179204F
FAERA BLOODLINE SUGAR PRINCE	SN0772002	GOLDEN RETRIEVER	F	Nov 22 1999	54 UK-41324
FAERA BLOODLINE SUGAR PRINCE	SN031445	GOLDEN RETRIEVER	F	Jan 6 1997	44 UK-4517
FAERA UNION OF GOLDEN PRINCE	9179007	GOLDEN RETRIEVER	M	Mar 25 1993	43 UK-44520
FAERA ANNA'S KESTER AT HOME	SP994213	GOLDEN RETRIEVER	M	Mar 12 1998	85 UK-CA3321990C
FAERA ANNA'S KESTER AT HOME	SP994215	GOLDEN RETRIEVER	M	Nov 20 1998	76 UK-9376
FAERA ANNA'S KESTER AT HOME	SP994215	GOLDEN RETRIEVER	M	Oct 19 1992	25 UK-09705220M
FAERA ANNA'S KESTER AT HOME	SN439985	GOLDEN RETRIEVER	F	Oct 1 1989	24 UK-09320
FAERA STARQUEST REEF CREATIONS	SP990470	GOLDEN RETRIEVER	F	Aug 23 1992	24 UK-09268240F-T
FAERA STARQUEST REEF CREATIONS	SP990470	GOLDEN RETRIEVER	F	Jan 17 1996	83 UK-04564
FAERA SUMMIT BLOOD THUNDER	SN046954	GOLDEN RETRIEVER	F	Apr 7 1986	55 UK-01426-T
FAERA TAINSH SHIP 2412001	SN0376497	GOLDEN RETRIEVER	F	Feb 19 2002	30 UK-03954
FAERA TAINSH SHIP 2412002	SN0376497	GOLDEN RETRIEVER	F	Mar 12 2002	32 UK-76569230F-01
FAERA'S ABECOSIA ARMS	SN024418	GOLDEN RETRIEVER	F	Sep 17 1997	26 UK-25064920F
FAERA'S ALL FERGUSON AT CALUSA	SN0229820	GOLDEN RETRIEVER	M	Jul 20 1999	24 UK-02156720M-T
FAERA'S ALL FERGUSON AT CALUSA	SN0229820	GOLDEN RETRIEVER	M	Jul 20 1999	24 UK-02156924-T
FAERA'S ALL FERGUSON AT CALUSA	SN0229820	GOLDEN RETRIEVER	M	Nov 29 1999	50 UK-9930
FAERA'S ALONG CAME THE SPIES ERIC	SN0760904	GOLDEN RETRIEVER	M	Nov 10 2001	25 UK-06757
FAERA'S ALONG CAME THE SPIES ERIC	SN0760904	GOLDEN RETRIEVER	M	Nov 12 2003	25 UK-067632990C-09-0100-CARDIAC

Screen Shot from the OFA website displaying the results using the search criteria of "Faera" in the name field.

Figure 4.

The screenshot shows the CHIC Search Results page. At the top, there is a search bar with the text "What is the Canine Health Info Center? CHIC Breeds Search CHIC". Below the search bar, the title "CHIC Search Results" is displayed. A message states "Refine this search 17 entries match your selection". Below this, there is a table with columns: NAME, REGISTRATION, BREED, SEX, BIRTH DATE, and CHIC #. The table lists various dogs with names starting with "FAERA".

NAME	REGISTRATION	BREED	SEX	BIRTH DATE	CHIC #
FAERA'S ALONG CAME THE SPIES	SN0760904	GOLDEN RETRIEVER	M	Sep 15 2001	15700
FAERA'S ASAP	SN07708707	GOLDEN RETRIEVER	F	Oct 31 2001	15650
FAERA'S BMOG	SN06750200	GOLDEN RETRIEVER	M	May 29 2002	22011
FAERA'S COURTNEY'S GASTER W/AINISH	SN42200101	GOLDEN RETRIEVER	F	Feb 7 1997	7360
FAERA'S FAUCHEIN FLAUB	SN06502902	GOLDEN RETRIEVER	F	May 22 2001	10950
FAERA'S FUTURE CLASSIC	SP077338	GOLDEN RETRIEVER	M	Jan 31 1999	15241
FAERA'S HEADED FOR THE FUTURE	SN42200104	GOLDEN RETRIEVER	F	Feb 7 1997	7450
FAERA'S I AM T-BAG	SN04736202	GOLDEN RETRIEVER	F	May 9 1995	7214
FAERA'S MAKIN MATHEM	SN05547302	GOLDEN RETRIEVER	M	May 1 2000	16300
FAERA'S Q	SN05653001	GOLDEN RETRIEVER	M	Mar 1 2001	12200
FAERA'S STARLIGHT	SN07082301	GOLDEN RETRIEVER	M	Nov 22 1999	7790
FAERA'S TAINSH SPEED DEMON	SN03786608	GOLDEN RETRIEVER	F	Apr 20 1999	16764
FAERA'S THE STORY OF MY LIFE	SN04736205	GOLDEN RETRIEVER	M	May 9 1995	7262
FAERA'S USA	SN07708705	GOLDEN RETRIEVER	F	Oct 31 2001	15640
FAERA TAINSH CLASSIC SUMOS	SN40042205	GOLDEN RETRIEVER	F	Oct 18 1997	18762
FAERA TAINSH NOT JUST A SUMOS	SN40042204	GOLDEN RETRIEVER	M	Oct 18 1997	11133
FAERA TAINSH FOG	SN03786606	GOLDEN RETRIEVER	F	Apr 20 1999	7696

Screen Shot from the CHIC website displaying similar search results using the criteria of "Faera" in the name field.

Once an individual dog is selected through the search options, detailed information is displayed, including health screening done, age at the time of testing, and test results. In addition, wherever possible, the database does a pedigree query, and displays the dog's sire and dam, siblings (both full and half), offspring, as well as any of their recorded health test results. All displayed names are hotlinked, so the user can easily browse from dog to dog.

Figure 5.

FAERA'S ALONG CAME THE SPIDER CHIC

Registration: SN87604904 Sire: SN70962301 Dam: SA24736002

Breed: GOLDEN RETRIEVER Sex: M *Titles: Address:

Color: GOLDEN CHIC #: 15706

Birthdate: Sep 15 2001 Admit. Reg. #

OFA Number	Registry	Report Date	Age	Final Conclusion
GR-8002502M-FI	HPS	Oct 29 2003	25	GOOD
GR-ELB21M25-FI	ELBOW	Oct 29 2003	25	NORMAL
GR-26727	CEP	Nov 20 2003	25	ABNORMAL TESTED: 03
GR-CAB740/25M/C-FI-ECHO-CARDIAC	ECHO-CARDIAC	Nov 12 2003	25	NORMAL - CARDIOLOGIST, ECHO

* CEPF Certification is valid for one year from the date of the exam.

Sire/Dam	Registration	Birthdate	Sex	Rotation	CARDIAC	ELBOW	CEP	HPS
FAERA'S STARLIGHT CHIC	SN24736002	May 9 1995	F	Dom.	GR-CAB22639/CIT	GR-ELB40224/F	GR-18309	GR-5677024/F
FAERA'S STARLIGHT CHIC	SN70962301	Nov 22 1999	M	Sire	GR-CAB275/329/C-FI	GR-ELB179934-FI	GR-22027	GR-7430226M-FI

Half Siblings (Sire)	Registration	Birthdate	Sex	Rotation	CARDIAC	ELBOW	CEP	CEP (Lateral)	HPS
CONFIRMAL FRO WHITE & COO	SN2449405	Mar 26 2005	F	Half(Sire)		GR-EL732724-FI			GR-7892724F-FI
CONFIRMAL HOLLYWOOD ACCOUNTS CHIC	SN2449402	Mar 26 2005	M	Half(Sire)	GR-CAB367/39M/C-FI	GR-EL702907-FI	GR-2511A		GR-79544724M-FI
CONFIRMAL CARABO COFFEE CHIC	SN2449401	Mar 26 2005	F	Half(Sire)	GR-CAB367/39M/C-FI	GR-EL702907-FI	GR-2512L		GR-79545724F-FI
CONFIRMAL BOUTIQUE & FAMILY FINE	SN2449407	Mar 26 2005	F	Half(Sire)		GR-EL733124-FI			GR-79553724F-FI
CONFIRMAL ROSEBRIER & CREAM	SN2449404	Mar 26 2005	F	Half(Sire)		GR-EL704924-NONE			GR-79252624F-NONE
CONFIRMAL BOLD THE LINE CHIC	SN2449401	Apr 23 2005	M	Half(Sire)	GR-CAB367/39M/C-FI	GR-EL7059024-FI	GR-2842B		GR-80000224M-FI
CONFIRMAL & BETTER HOME ON CHIC	SN2449402	Apr 23 2005	F	Half(Sire)	GR-CAB367/39M/C-FI	GR-EL706024-FI	GR-2843D		GR-80003224F-FI
LAUREL'S FIRE & ICE CHIC	SN2449407	May 4 2005	M	Half(Sire)	GR-CAB367/39M/C-FI	GR-EL764724-FI	GR-2496E		HOLD UNILATERAL LEFT
LAUREL'S STAR FIRE COUNTRY	SN2449405	May 4 2005	F	Half(Sire)	GR-CAB367/39M/C-FI	GR-EL764724-FI	GR-2496E		
LAUREL'S FIRE GOLF	SN2449403	May 4 2005	F	Half(Sire)		GR-EL704924-FI			GR-79395024F-FI
LAUREL'S AMBERGOLDEN DUNSTON	SN2449402	May 4 2005	F	Half(Sire)		GR-EL835824-FI			MODERATE
DUNBAR'S CATCH A TIGER BY THE TAIL CHIC	SN8727201	Jun 17 2005	M	Half(Sire)	GR-CAB641/29M/C-FI	GR-EL7059024-FI	GR-2779L		GR-79980224M-FI
WOODBRICK SUNSHINE & BLUE CHIC	SN8479801	Jun 29 2005	F	Half(Sire)	GR-CAB647/24F/C-FI	GR-EL804420-FI	GR-2432M		GR-80398225F-FI
WOODBRICK HIDE THE PEGASUS	SN8479805	Jun 29 2005	F	Half(Sire)		GR-EL799224-NONE			
SUMMIT JUST BY CHANCE	SN8331101	Jun 30 2005	M	Half(Sire)	GR-CAB334/37M/C-NONE	GR-EL8423M30-FI			
SUMMITT ONCE IN A BLUE MOON CHIC	SN8331106	Jul 4 2005	F	Half(Sire)	GR-CAB334/37M/C-FI	GR-EL802720-FI	GR-2349V		GR-80314020F-FI

Screen Shot from the OFA website displaying individual dog record. Whether searching from the OFA site or the CHIC site, the individual dog records such as the one above are seamlessly accessed from either.

Another unique feature is the vertical pedigree analysis which encourages breeders to truly analyze the depth and breadth of a pedigree in a vertical fashion rather than the simple more traditional horizontal method.

Figure 6.

Hip Status Vertical Pedigree [Printable](#) [Hips](#) [Elbows](#) [Cervical](#) [Thyroid](#)

FAERA'S ALONG CAME THE SPIDER SN87604904 [Return to info display](#)

<p>FAERA'S ALONG CAME THE SPIDER External standard "GOOD"</p> <p>Sib(s): GOOD(1) FAIR(2)</p> <p>Sib(s): GOOD(2)</p> <p>Offspring(s):</p>	<p>FAERA'S STARLIGHT External standard "EXCELLENT"</p> <p>Sib(s): GOOD(2)</p>	<p>TWIN-BEAR-4'S PERENNITY External standard "FAIR"</p> <p>Sib(s): GOOD(1) FAIR(2)</p> <p>FAERA'S SWEET CAROLINE External standard "GOOD"</p> <p>Sib(s): GOOD(3) FAIR(5)</p> <p>FAERA'S FUTURE CLASSIE External standard "GOOD"</p> <p>Sib(s): GOOD(2) FAIR(4)</p> <p>FAERA'S SHILO LUERRE FINE External standard "FAIR"</p> <p>Sib(s): GOOD(12) FAIR(5)</p>
--	---	--

The OFA database is not directly linked to the AKC or any other registry. Parent, Offspring, and Sibling information is limited to dogs contained in the OFA database, and where the sire/dam information has been filed out on the application so that subsequent relationships can be determined. Titles are included as a courtesy and are limited to those provided on the dog's application.

Screen Shot from the OFA website displaying vertical pedigree analysis information. Where available the pedigree shows not only the animals in the direct pedigree line, but summarizes information on sibling data.

The CHIC program offers a variety of benefits to breeders, buyers, parent clubs, and researchers. For breeders, CHIC provides a reliable source of information regarding dogs they may use in their breeding programs. In the future, breeders can begin to analyze the pedigrees of a proposed breeding for health strengths and weaknesses as well the traditional analysis of conformation, type, and performance strengths and weaknesses.

For buyers, the CHIC program provides accurate information about the results of a breeder's health testing. For diseases that are limited to phenotypic evaluations, there are no guarantees. However, the probability that an animal will develop an

inherited disease is reduced when its ancestry has been tested normal. Further, as more DNA tests become available and the results are entered into CHIC, the CHIC database will help breeders predict whether progeny will be clear, carriers, or affected.

For parent clubs considering establishment of health databases on their own, CHIC provides the answer with no upfront investment required by the club. The CHIC infrastructure is supplied and maintained by the OFA. The data is maintained in a secure environment by trained staff. The services are not subject to the time, technology, and resource constraints that parent clubs might face on their own. This frees parent clubs to focus on the tasks of identifying health concerns, educating their membership, raising funds for research, and encouraging participation in the CHIC program.

For researchers, CHIC provides confidential and accurate aggregate information on multiple generations of dogs. CHIC information will also be useful for epidemiological studies enhancing our knowledge of health issues affecting all breeds of dogs.

For everyone interested in canine health issues, CHIC is a tool to monitor disease and measure progress.

The Orthopedic Foundation for Animals is a nonprofit 501(c)(3) foundation formed in 1966 with the following objectives:

- 1. To collate and disseminate information concerning orthopedic and genetic diseases of animals.*
- 2. To advise, encourage and establish control programs to lower the incidence of orthopedic and genetic diseases.*
- 3. To encourage and finance research in orthopedic and genetic disease in animals.*
- 4. To receive funds and make grants to carry out these objectives.*

The AKC/Canine Health Foundation is a 501(c)(3) nonprofit organization formed in 1995 with the following mission: To develop significant resources for basic and applied health programs with emphasis on canine genetics to improve the quality of life for dogs and their owners. The AKC/Canine Health Foundation is the largest funder of exclusively canine health research in the world.

Eddie Dziuk
Orthopedic Foundation for Animals
Columbia, MO